THE

JOURNAL OF GAS LIGHTING.

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. XV. No. 367—18th YEAR.] LONDON, NOVEMBER 13, 1866. [Subscription per Ann. { 15s. in Advance / 18s. Credit } Price 8d. Unstamped.

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1862.

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4. The gas passing without being registered at all.
5. The temptations and facilities to fraud which it is notorious the Wet Meter presents.

1862.

CLASSES X. & XXXI.

6. The damage to house property which the impracticable attempt to keep the lights from jumping, by giving all the pipes a gradual ascent from the Meter, so as to admit of the water trickling back into it, necessarily occasions.
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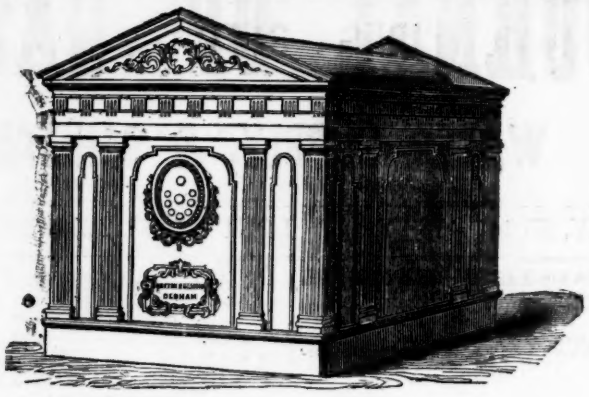

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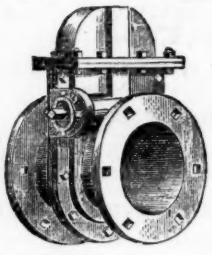

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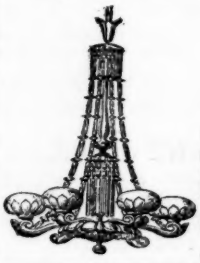

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☞ *See "Practical Mechanic's Journal," Dec.* 1, 1865; *also, p.* 711 "JOURNAL OF GAS LIGHTING," *Sept.* 18, 1866.

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It is worthy of remark, that the only two other Firms who receive Awards *both manufacture imitations of Thomas Glover's* Patent Dry Gas-Meter, and the reason given for these Awards is "*construction* and sound workmanship." Thomas Glover, therefore, claims that the *construction* of his Meter has obtained *three Awards from the Jury of the International Exhibition of* 1862; at the same time, *contrasting* the Award granted for his Meter by the words, "*For excellence of manufacture, as regards Dry-Meters.*"

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CONTENTS.

Notes upon Passing Events:— PAGE

The Appeal to Public Charity of the Workmen in the Shipbuilding and Engineering Trades of London 813
Return by the Metropolitan Board of the Increased Rateable Value of the Metropolis since 1856 814
The Sewage Congress at Leamington—Earth Closets *v.* Water Closets 814

Circular to Gas Companies:—

The Private Business of the Next Session of Parliament 815
Metropolis Gas Supply 815
Deputation of the Delegates to the Board of Trade 815
Strike at the Manchester Gas-Works 816
Auction of Brighton and Hove Gas-Shares 816
The Colonial and General Gas Company in the Winding-Up Court . 816
Abandonment of the Appeal of the Newcastle Gas Company against the Conviction for Supplying Impure Gas 817

Communicated Article:—

On Defects in the Apparatus generally used for the Determination of Bisulphide of Carbon in Coal Gas, and Description of a New Apparatus for its Estimation, by A. G. Anderson, Esq. 817

Register of New Patents:—

Reader, T. J.—Force-Pumps 819
Croll, A. A.—Arranging Conduits or Channels for the Reception of Gas, Water, and other Mains, &c. 820
Newton, W. E.—Distilling Petroleum and other Mineral Oils . . . 820
Clark, W.—Steam-Pumps 820
Newton, W. E.—Treatment of Substances used in the Purification of Gas 820
Lyttle, W. A.—Distillation and Rectification of Hydrocarbon and other Volatile Oils 820
Liernur, C. T.—Pneumatic Method for the Inoffensive Removal of all Fluids, Solids, and Gases from Water-Closets or Privies 820
Parkes, J. and J.—Apparatus for Measuring Liquids 820
Brooke, E.—Deodorizing Noxious Gases from Sewers and Drains . . 821
Phillips, W. H.—Rotary Pumps 821
Young, J.—Distilling 821
Shinner, G. W.—Utilizing Sewage Matters and Liquids 821
Applications for Letters Patent 821
Grants of Provisional Protection 821
Invention Protected for Six Months 821
Notices to Proceed 821
Patents which have become Void 822

Legal Intelligence:—

Lord Romilly's Chambers—Pateley Bridge Gas and Water Works Company, Limited 822
Vice-Chancellor's Court—Colonial and General Gas Company, Limited 822

Miscellaneous News:—

Meeting of the Chartered Gas Company 823
Meeting of the Equitable Gas Company 825
Strike at the Corporation Gas-Works, Manchester 826
Reduction in the Price of Gas at Warrington 826
Meeting of the Singapore Gas Company 827
Metropolis Gas Supply—
City Court of Sewers 828
Deputation to the Board of Trade 828
Dr. Whitmore's Report on the Quality of the Gas supplied in St. Marylebone, in August and September, 1866 829
Dr. Whitmore's Report on the Quality of the Water supplied in St. Marylebone, in August and September, 1866 829
Return by the Metropolitan Association of Medical Officers of Health of the Composition and Quality of the Metropolitan Waters, in September 829
Presentation to the Late Manager of the Newcastle Gas-Works . . 829
Railway Rating 829
Suspension of the Firm of James Russell and Sons, Wednesbury . . 829
Share List of Metropolitan Gas Companies 830
Price Current 830

TO CORRESPONDENTS.

No notice can be taken of anonymous communications. Whatever is intended for insertion, must be authenticated by the name and address of the writer; not necessarily for publication, but as a guarantee of good faith.

W. W. W.—*The water company cannot be assessed for pipes of which they are neither owners nor occupiers, but the railway company may be assessed for them in parish B, and the assessment of the water company in parish A is liable to be increased in proportion to the benefit they derive from the supply of water in parish B, in estimating which benefit the assessment of the railway company in respect of the pipes in that parish must be taken into consideration.*

NOTICES.

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THE JOURNAL OF GAS LIGHTING,
WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, NOVEMBER 13, 1866.

Notes upon Passing Events.

TEN thousand mechanics and labourers are said to be out of work in the neighbourhood of Greenwich, and both banks of that part of the Thames. The result is great distress, in which wives and children suffer. An appeal has been made on their behalf to public charity, the distress being too wide-spread for the local poor-law authorities to grapple with. This appeal has not been met with the cordiality which is usual in England on such occasions. To the Indian famine was offered more than was required, and the subscription for the sufferers from the Quebec fire already amounts to a very large sum. The reason of this unusual apathy is not far to seek. The leaders and chiefs of the people out of work are the mechanic engineers —the members of the most wealthy and the most powerful trades unions in the kingdom—the authors of the arrangements which have organized all the other trades unions into a systematic war on capital. As long as trade was good, there was no reasoning with these men: no sooner did any "*shop*" get scent of a new contract than it claimed a rise of wages, and if every demand—whether for wages or for labour-restricting regulations—was not immediately conceded, a strike followed. With the large wages obtained they subscribed liberally to other strikes, and apparently lived well; otherwise there would not be so many first-class mechanics on the verge of destitution. For there is no doubt that more than half the pauperism of this country is created by the certainty of poor-law relief. Thus these men have not only put the screw on themselves, but they have supported the strikes in the coal and iron trades, and now they are reaping the fruits of their own success. Scotland, where wages are lower, has taken a large share of what, under wiser management, might have been done on the Thames. England no longer monopolizes good workshops, but she has still her coal, her iron, her cheap conveyance, and the system of credit that makes great transactions easy, *where profitable*. But if workmen will insist on grinding the utmost farthing out of employers bound by contracts, then they must expect to see the factory-doors frequently closed, and only opened when profits can be made safe without a strike in expectation every Saturday night. Before the public put their hands in their pockets, they will like to know what the trades unions have done to relieve the distress they have had such a large share in creating. At this very moment, all the trades that work up English iron are crippled by a strike in the iron trade. Wages rose steadily with the rise in the price of the manufactured article. The price has fallen, and now the workmen decline to submit to a proportionate decrease of their earnings—a decision the result of the agitation of those who tell them, like Mr. G. Potter, that the capital that employs them is their enemy. The state of the case is completely set out in the following extract from the speech of Mr. Palmer, of Jarrow, whose firm is admitted by the men themselves to be one of the most liberal in the trade:—

Trade generally, and the iron trade in particular, has fallen into a deplorable state of depression; and when we look at the position in which we now are in that trade, as compared with what it has been in previous years, I think you will agree with me that the resolution which has been come to by the ironmasters is most reasonable, and one likely to be conducive to the interests, not only of the workmen themselves, but also to the general trade of this locality. I find that from July to October, 1863, we were paying 9s. per ton for puddling iron, pigs being then from 48s. to 50s. per ton; and we were then selling iron plates at £8 15s., and bars from £7 10s. to £7 15s. per ton. I give you these details because I wish to show you that the advance of wages from time to time, down to the present, has been really in accordance with the advance in the price of iron; and now that the price of iron has so far been reduced, we merely ask you to give up a portion—not all, but a portion only—of that which has been acceded to you from time to time. Well, then, from October to December, 1863, puddling was raised to 10s., the price of pigs being then about 50s. per ton; but then we got for iron plates £9 15s., and for bars and angle iron £8 10s. to £8 15s. per ton. From December, 1863, to February, 1864, the price of puddling was advanced to 11s. per ton, pigs remaining at the same price. The production of pigs increased more in proportion to the power of use, so that pigs remained at the same price—viz., 50s. a ton; whereas manufactured iron advanced, plates to £10 10s. and bars to £9 5s. and £9 10s. From February, 1864, to February, 1865, another advance was given to 12s. for puddling iron, pigs still remaining about the same price, the price of plates being something about £11 10s. to £12, and bars £10 10s. to £11. Well, the wages in February, 1865, were reduced to 11s., the price of pigs having risen to 55s. per ton. You all know the erections that have been going on in this part of the country; the rolling-mills had so far increased in excess of the blast-furnaces that pigs were in great demand, and the

makers of pigs got their prices advanced from 50s. to 55s per ton, and even more. The price for puddling iron has remained at 11s. to the present time; and what we have required is now, not that you should come down to 9s., as when the price of plates was £8 15s. and bars £7 10s. per ton, but that you should come down to 10s., now that the price of plates is £8 or rather less per ton, and bars £7 or rather less. You will at once see the enormous difference in the prices of manufactured iron, as compared with the wages in 1863, and what we are now seeking.

The fact is that trades unions are endeavouring to establish a system which is just as impossible as to put a quart into a pint—viz., "heads I win, tails you lose." Some sanguine enthusiasts look to "partnerships of industry" as a substitute for capitalists, but these are wild dreams, as we showed in our previous "Notes." Given a straightforward ready-money trade for something in which the demand is continuous and the profit certain—given managers of extraordinary energy and unusual ability—and a co-operative trading or manufacturing association will have a fair chance of success. To the public it is no consequence whether its wants are supplied by an individual capitalist or a company of workmen with capitel, so long as their wants are supplied. As to the abstract value of co-operative associations, there can be no question—there cannot be too many, so long as they are successful; but no one who has ever employed many workmen can help seeing that the difficulties of co-operative manufacture are enormous, while the arrangements of co-operative stores are comparatively easy, and if fairly worked out, very profitable. On Friday last Mr. (Tom Brown) Hughes addressed a letter to the *Times* on this question, in which he admitted the difficulties of his favourite scheme for abolishing the "bloated "capitalist," with great, if unconscious candour. He says that "three industrial partnerships of journeymen tailors "failed. In one instance, because the manager was incom-"petent and dishonest; in the second, for want of capital; "and in the third, because the expected custom from trades "societies and other organized bodies of labour was never "forthcoming." Why these are just the difficulties against which all the many companies started since the passing of the Limited Liability Act to work established manufactories and shops have to contend. A manager who will buy raw material as if he was buying for himself, and will not either take commissions amounting to double his income or give way to the jobs of the committee who control him, is indeed a phœnix. For it must be remembered that, call a co-operative society what you will, it is, after all, a limited liability company, and is liable to suffer from the want of that vigour, decision, and economy which distinguishes a board or a committee from a single individual. A model association of sober tailors might certainly do well; but, if every piece of bad work objected to by the manager, or every case of drunkenness, is to be debated, where a single master would settle the question on the spot, anarchy will settle permanently on the establishment of paternal tailors. But why select tailors? Why not printers, who are a steadier and more thoughtful class of men? Probably because to get work requires a degree of energy and devotion which few will give to a company. Every man who is clever in making money for other people soon sets about making it for himself; and good managers are and always will be scarce, because such men like to work for themselves, and do not like to be badgered by committees. The very industrious, the very frugal, and the very sober, will always be the minority in handicraft trades, and therefore, as co-operative manufactories can only flourish with model members, their success will be rare exceptions.

A return has been printed for the Metropolitan Board of Works, showing the rateable annual value in 1856, and in every succeeding year to 1866, of the property in all the district, including the City of London, within the taxing powers of the Board, which shows a very remarkable increase in the wealth of the metropolis and in the tax-raising abilities of the Board. The increase in the rental since 1856 amounts to upwards of £3,900,000, and the increase in revenue to nearly £50,000 from the same 3d. rate. This is not entirely due to new houses and higher rents. The valuations of all public companies have been screwed up as high as the law would permit, and perhaps a little higher. The increase is universal, but in some districts extraordinary. The highest is in Kensington, 106 per cent. (we leave out decimals), the combined result of new houses and railway extensions; the City of London, 75 per cent.; Islington, 77; Shoreditch, 55; Bethnal Green, 83; Camberwell, 90; Paddington, 76. The lowest increase is in Marylebone, 5, and St. Martin's, 6; while St. John's, Hampstead, has jumped up to 91. Looking at the fact that the greatest increase occurs where railway-stations have been established, it is plain that a very few years will produce £200,000 a year from a 3d. rate. But the Metropolitan Board are not content with this rapidly rising revenue. On the 26th, a motion will be brought forward by Mr. Turner, and no doubt carried, for applying to Parliament for the appointment of a Valuation Committee, to be composed of the representatives of the several metropolitan counties, the City of London, and the Board, with a view to procure a uniform valuation of the whole property comprised within the metropolitan area, in order to equalize the distribution of the burthen of the rates to be levied under the authority of the Board. If this receive parliamentary sanction, a measure for a uniform poor-rate will soon follow.

The eternal sewage question has risen to the surface again, in the shape of a congress at Leamington, a town which early set an example of external cleanliness, and which is now sorely puzzled to find an economical mode of disposing of its refuse, for Leamington is situated on the side of a sluggish stream in the midst of fat clay soil. The principal speaker—Dr. Hawksley, the physician of Hanover Square—was long and eloquent on earth instead of water closets. We need not waste the patience of our readers in discussing earth *v.* water in reference to London. All Dr. Hawksley's eloquence will not persuade the metropolitan public that an appreciable damage to public health can arise from the exhalations from their well-managed sewers. The best authorities have agreed on the system, it has been executed at a vast cost, and if we could only do as much in proportion for the dwellings and habits of the labouring poor, London would be the healthiest great city in the world. The idea of increasing the number of scavengers carts in the metropolis is absurd; as, if any man could become possessed of an acre of fathomless pit within five miles of Charing Cross, he might realize millions by a small toll on the emptying of builders and scavengers carts. It is true that before Mr. Ayrton's committtee Mr. Edwin Chadwick appeared, and, for the one thousandth time, declared that the whole system of sewerage of London was wrong, and offered, for a series of two pennies per head, to put the whole business on a perfectly satisfactory footing. But, unfortunately for Mr. Chadwick's authority, he has, like every dog, had his day, and a pretty mess his disciples made of it wherever they were permitted to try their hands—at Southampton, at Croydon, at Sandgate, &c. At Rugby the water supply is short to this day. Nay, more, his "Thanes "fly from him." Mr. Cuthbert Johnson admits that they made great mistakes at Croydon; Mr. Robert Rawlinson has fallen away from the faith that was in Chadwick; while several other weaker vessels have come to grief in their engineering speculations. As to earth closets, we expressed our views very fully the other day. As an expedient for relieving a great city of its *excreta*, any inspector of nuisances in the City of London can prove it to be impossible. But in villages, and in any small town where an autocratic system of goverment could be established, it might work much better than the vile plan of polluting rivers. Water-closets for labouring people are a mistake, unless visited twice or thrice a week by a person whose business it is to keep them in order. Besides, water-closets in villages involve the loss of all the sewage so valuable in gardens and allotments. Mr. Robert Rawlinson's costly arrangements at Alnwick, where "even the tramps lodging-"house" was provided with "water-closets," is a complete failure. However, the following extracts from the speeches of the Leamington Congress are not without interest, as showing to what lengths a hobby will carry a clever man. For instance, Dr. Hawksley revives the old stories about British guano—a man of science should know better—and gravely proposes to make a profit on the very article which the city of Manchester is glad to dispose of at a loss of £6000 a year. For the question of cartage is the profit question in valuing all bulky manures:—

The Earth Closet Plan.

Mr. Monle's earth closet effects the object in the most simple and convenient way. On using the handle a shower of earth supplies the place of water, and the arrangements for the removal of the products may be made either by the adoption of a light zinced iron pail, or of a box, or of a vault into which all the earth closets in a house might pour their products. Which of these modes shall be adopted is simply a question of convenience; my own belief is, that for a crowded town where there is little convenience for the storeage and drying of such material, and for the storeage of the earth required in its preparation, that removal twice or thrice a week, or, if necessary, every day except Sunday, would be best, and then the use of pails would be most convenient, and, in my opinion, partially practicable. In working out of the practicable application of this method I am willing to

accept the most rigorous and difficult requisitions.—1. All the refuse organic matter (liquid and solid) to be removed and utilized.—2. The work to be accomplished so easily, without nuisance or offence to any of the senses, and the necessary removal from the houses to the stations, to be effected in the early morning between six and nine a.m.—3. The product shall be of considerable commercial value, so that its preparation, collection, and manipulation—in addition to preserving our air and water completely from pollution—shall pay a handsome surplus after defraying all expenses.—1. The absorption and utilization of the *excreta*, fluid and solid. It is found that without the whole of the former, 4 lbs. of earth for each individual per diem are amply sufficient, but with a provision of 6 lbs. per diem the whole of the fluids, as well as the solids, are dealt with successfully.—2. In calculating the amount of earth required, therefore, together with the number of closets, the number of houses, the cartage and manual requirements, the following averages are supposed. The population of London is now considerably over 3 millions, but for convenience, and to avoid exaggeration, that number is taken for the basis of calculation. It is supposed that about six persons may be taken as the proportion for each habitation; the number of the latter would, therefore, be 500,000. It is next supposed that the number of closets in all the houses, rich and poor, may average two to each house. If, therefore, we break up the administration of the sewage management into 500 sections, we shall have each section presiding over a very compact and manageable number (1000) of houses. Or, better still, if the value were taken, not from the number of the habitations, but of the closets in them, each section would then care for 2000 closets. Each section would employ ten carts, to be employed from six to nine a.m. Each cart would convey in this interval of time 200 clean pails, containing each the earth required for three persons—that is, 18 lbs.—and for every such pail deposited in the area of a habitation would be taken away another which had been placed there over night, and which having been in use the preceding 24 hours, contained the refuse organic matter of the establishment. A pair of horses and van, with a capacity of about 4 feet wide by 17 feet or 18 feet in length, with three stages, would easily convey the whole of the 200 pails, together with any other refuse, such as cinder-dust, vegetable, &c., which the householder desired to send away. The total weight on starting from the station would be:—200 pails, about 9 cwts.; 200 lbs. of earth for 600 persons, 1 ton 12 cwts., making a total of 2 tons 1 cwt. On its return to the station the additional weight would be 16 cwts. 172 lbs.; total, 2 tons 17 cwts. 172 lbs. Additional matters might bring the weight up to 3 tons, or a little more. The result, then, as regards labour would be, that for every 600 persons, two men, two horses, a cart, and 200 pails would be employed; and the one cart and two men might be seen in the two or three streets committed to their charge in some part of the inverval of time between six and nine a.m.

Dr. Hawkesley's balance-sheet is founded on an estimate of the value of human manure, which practical experience has long since reduced to a cipher as regards a great city:—

If we take the lowest estimate, that which values the excretions at 14s. per annum for each individual, and which brings the annual value for 3,000,000 people to £2,100,000, we shall be free from all danger of exaggeration and error on the side of an over estimate. The cost of the requirements for 200 closets may be thus stated at per diem:—Labour of two men for three hours, 8s.; cart and two horses for the same time, 4s. 6d.; quota of rent for shed, 6d.; per diem, 8s.; or 48s. per week, or £124 13s. a year, and for the 10,000,000 closets supposed to be required for the 500,000 habitations, the annual expense would be £623,250. This, deducted from the gross revenue, leaves £1,476,750, which, if employed to pay 7d. per head per annum to each individual in the population of 3,000,000 for the refuse of the houses, would still leave a surplus of £426,750. Multiply this 7s. a head by the numbers living in each habitation, the probability is that no householder would receive less than £1 8s. a year, and many would receive £4 4s. and £8 8s. a year. The balance left of £426,750 would pay to a company formed to supply earth closets and pails at the rate of 10 per cent. for their capital embarked, and still the balance would be £371,750 to pay for enterprise, management, &c. I wish particularly to impress my hearers with the fact that this calculation multiplies very unnecessarily the frequency, and, therefore, the expense of collection, and at the same time estimates at the lowest and safest rate the value of the produce. There can be little doubt that the collection from each house need not exceed twice, or, at the most, thrice a week. This would immediately reduce the number of carts and men employed to one half or less, and the expense proportionably, while the produce can undergo no diminution or deterioration; it could be stored for three or four days or a week, like the dust. Again, there is no real reason why the removal should be effected in all parts of the town at the early hour mentioned. If the busier and more important half of the various districts were cleared at the earlier hours, and the less busy and important half from nine till twelve, this would occupy the cartage organization for six hours a day, which would be sufficient labour for the horses, and would leave the men disengaged for the remaining hours to attend to the other portions of labour—viz., sifting earth, drying product, &c.

Mr. Heron (town-clerk) gave the following account of the Manchester system, which, looking at the vital statistics of Manchester, does not seem perfectly satisfactory, and yet it would be difficult to devise a better plan:—

In Manchester the authorities felt that it was desirable to keep the refuse out of the sewers until it could be shown what they were to do with it when it got it into the sewers. He concluded by reading the following letter, illustrating the position of Manchester in reference to the sewage question:—The mischievous consequences resulting from the encouragement if not the obligation to introduce water-closets into houses, small as well as large, can hardly, as it appears to me, be overrated. The state of the Thames speaks volumes. The case of London is, however, to a certain extent, no doubt exceptional. The value of land and the manner in which the houses have been erected may have necessitated the use of water-closets, and may render the erection of external privies and of ash-pits impossible. But with the problem in what manner the sewage of that immense district is to be disposed of, I am not inclined to meddle. But why a course which will lead to similar results in every other district should be so recklessly insisted upon, it is difficult to imagine. We find complaints arising on all sides of the present foul and pestilential condition of formerly pure trout streams by reason of the house drainage and town sewage which is turned into them—evils resulting entirely from the introduction of water-closets into all houses. How these consequences are to be avoided, when water-closets are generally adopted, our theorizing sanitary reformers do not suggest. Nor have they ventured to estimate the expense which must be incurred in any attempt to obviate the evils complained of. Villages spring up in comparatively rural districts; water-closets are adopted as a matter of course, without considering what may be the result, or who is ultimately to be poisoned, and the drainage is turned into the nearest stream. What alternative course is possible I have never seen in any practicable form suggested. All attempts to catch and utilize the sewage waters have been utterly unsuccessful. Great expense has been incurred and no return obtained, the product having been found useless, so much so that for agricultural purposes it has proved to be not worth even the expense of cartage. You would observe that all attempts to induce the gentlemen who opposed the proposition of the Manchester Corporation in 1858 to obtain power from Parliament to discourage the introduction of water-closets into small houses, to give any estimate of the additional expense which the carrying out of their favourite scheme would involve, were unsuccessful. No opposition was offered by the Government department, and, singularly enough, no proposal was made at the time when the president, Mr. Adderley, had successfully taken legal proceedings to restrain the Birmingham Corporation from turning the sewage of that town into the rivers. In the city of Manchester we have upwards of 66 million houses, of which more than 51 million are of the rent of £10 per annum and under. We may say that, in fact, we have no water-closets; certainly not many of the smaller class of houses. The town sewage does find its way into the rivers. What their present state is you find discussed, although perhaps in rather exaggerated terms, by Mr. Rawlinson. If the water-closet system, so strongly advocated by those who once advised Government upon these matters, though fortunately they were not able to influence Parliament, were generally carried out, the inhabitants of the city would be subjected to tenfold additional expense, and, in my opinion, an enormously increased nuisance; whilst, in all probability, the corporation would be compelled at any rate to expend in the removal of the ashes, which alone would still remain and be altogether unsaleable. A larger sum than is now found sufficient to cleanse all ash-pits and keep the city in a satisfactory sanitary condition. We remove annually about 100,000 tons of night-soil and ashes from upwards of 36,000 ash-pits. It is sent by railway into Yorkshire, Nottinghamshire, and Lincolnshire. The price charged, exclusive of cartage, is about 1s. 6d. per ton, and the carriage added. Much depends upon the distance it is conveyed; and the cost fluctuates between 3s. 6d. and 7s. 6d. per ton. The whole expense incurred during the past year amounted to £16,130, which was reduced by the sale of manure to £6644. In a small town, especially one situated in an agricultural district, the system adopted in Manchester may be made, I believe, not only to pay all expenses, but to leave an actual profit to the authorities.

Circular to Gas Companies.

The private business of the approaching session of Parliament promises to be principally devoted to the supply of gas, for of the *Gazette* notices already given of intended applications for private Acts the majority are from gas companies. The great railway companies are, by common consent, abstaining as much as possible from the promotion of any Bills for the extension of their lines, and as regards new projects, the bursting of the financial association bubble has so completely discouraged speculative enterprise, that the formation of such schemes must be suspended, and the investing public require time for consideration. A few water companies will probably have to apply for further powers, and those with the ordinary road Bills and the gas Bills will constitute the bulk of the private business of the session. In those towns where there is a daily newspaper the publication of the first local notice may be delayed until Saturday, the 17th inst., but in places where newspapers are published less frequently, care should be taken that the first local notice appear at the latest in the papers of Friday, the 15th inst. There may be some companies who have been hesitating whether they should apply for Acts to be passed next session to whom this notice may be useful. It has happened that by neglect to notice the days on which local papers are published, the opportunity of making the required application has been lost. We cannot too strongly urge on those gas companies who are not yet incorporated by Act of Parliament, the importance of availing themselves of the time yet remaining, during the present week, to apply for the protection which such an Act alone can secure.

It was stated by the chairman of the Equitable Gas Company, at their recent general meeting, that it was not the intention of the directors to renew their application to Parliament for the extensive additional powers required last session; but the Imperial and the Chartered Companies, to whom the powers they applied for were refused, intend to repeat their applications in the next session. The Imperial Company have secured for the site of their proposed new works 150 acres of land in an entirely unobjectionable locality at the east of the metropolis, and the Chartered Company have selected a site near the mouth of Barking Creek, at the distance of about a mile and a half from the spot chosen by the Corporation of London, as the site of their proposed gas-works. It is understood that the Home Secretary is preparing a Bill to amend the Metropolis Gas Act of 1860, and, if that be so, the Corporation can have no pretext for proceeding with the Bill which the special Gas Committee of the Common Council have announced it was their intention to prosecute, to enable the Corporation to take the gas supply of the City into their own hands. After the

experience of last session, they have wisely abandoned the notion of competing with the existing companies, and it is reported that they have solicited overtures of arrangement from one or more of those companies. The *City Press*, indeed, asserts that the special Gas Committee had "made overtures "to the various companies, in order to arrive at an amicable "settlement of the great gas question," which "offers and "suggestions" were declined; but we have good reason to believe that assertion to be incorrect. We understand that no offers whatever were made to the company from whom overtures were solicited; consequently they could not have been declined. The *City Press* says the committee are "bracing "themselves hopefully for a renewal of the contest;" but it is now admitted that "of course the interests of the shareholders "who have embarked their capital in existing ventures must "not be overlooked," though at the same time "it is too much "that the eyes and the pockets of the public at large are to be "made to suffer in order that these gentlemen may rejoice "over good dividends." The dividends over which the shareholders are said to rejoice are limited in their amount to what Parliament conceived to be a fair remuneration for capital invested in such undertakings; and the special Gas Committee may feel assured that, in any arrangement between them and the gas companies that may be sanctioned by the Legislature, an equivalent remuneration will be provided. Whether the eyes and the pockets of the citizens would suffer by the transfer of gas lighting into the hands of the Corporation, is a question which it would be well for them seriously to consider before more money is squandered in attempting to make the transfer. A deputation waited on the President of the Board of Trade on Saturday, on the subject of the metropolis gas supply, when Mr. Beal and Mr. Hughes on behalf of the metropolitan vestries, and Mr. Dresser Rogers as representative of the citizens of London, laid bare their grievances, and urged the Government to act on the recommendations of the parliamentary committee of last session, and to take measures whereby the gas supply of the metropolis may be placed in the hands of the local authorities. Mr. Beal opened the history of gas lighting in London from the report of Sir W. Congreve in 1823; and on approaching more recent times he dwelt particularly on the Manchester system, and on the great advantages alleged to have been gained by the ratepayers of that town by Corporation management. Sir Stafford Northcote listened patiently to the oft-told tale, and promised to consider the question, to obtain further information, and to give an early answer. In the meantime, no doubt the gas companies will take care to supply the information required, so that the real merits of the question may be presented to the Government before they take action in the matter.

The Manchester Gas Committee have been parading before the City Council the gas-works under their control. A formal inspection of the works at their three stations was made, under the guidance of the chairman, the deputy-chairman, and other members of the committee; and at the Gaythorn station Mr. Leigh explained the processes for the purification of gas on which he has been engaged for many years. The account given in the local papers of the processes adopted is very imperfect, for the reporters evidently mistook the object of the experiments to be the prevention of offensive smell during the manufacture, and not the purity of the gas itself. It may be gathered, however, from the report that the means employed by Mr. Leigh for the removal of bisulphide of carbon is copious washing with concentrated ammoniacal liquor, which is said to have been very successful. After the inspection of the works, the company had luncheon in a building adjoining the meter-house, at which Alderman Curtis, the chairman of the Gas Committee, presided. He gave a sketch of the history of gas lighting in Manchester, in which, of course, the advantages of Corporation management were sufficiently vaunted, and the important benefits which the town had derived from the system were set forth in brilliant colours, without obscuring the picture by the introduction of crowds of discontented consumers complaining of the high prices they had to pay for gas to enable the town to procure those advantages. It was asserted that the annual consumption of gas had increased from 248 million feet in 1844 to 1160 millions; it was estimated to reach next year to 1280 millions, and that in the ten years following the consumption of gas in Manchester would amount to 2430 millions, or to ten times the quantity consumed in 1844, when the works were transferred to the Corporation. But even the glories of Corporation management are liable to be dimmed by the force of circumstances, and within a few days from this boasting of the increased and continuously increasing extension of gas lighting in Manchester, the whole town was in danger of being thrown into darkness, and the shops and factories were actually lighted with candles and lamps. The men at the gas-works struck for an advance in their wages from 4s. 6d. to 5s. a day, and though requested to wait until the new elections for town councillors had been made, they left their work without giving proper notice. Other labourers were, however, procured from Liverpool, and some of the old hands returned to work, so that most of the street-lamps were lighted, and it has been announced that a sufficient number of workmen has now been procured to supply the demand for gas to nearly all consumers. This event, occurring so shortly after the display by the Gas Committee of their large manufacturing resources, shows in a striking manner that even the boasted Corporation management is not exempt from the ills that gas is heir to, though it is probable that their consumers have borne more patiently from the Corporation than they would from a maligned gas company the inconveniences attending a cessation of their supply. The result of the strike at the Manchester Gas-Works will be of use as a warning to the workmen that they cannot yet have everything their own way —whatever may be the effect of giving them increased political power hereafter—and that when unreasonable demands are made at the time their services are most wanted, in the expectation that their employers will be forced to yield, such demands can be successfully resisted.

The stringent regulations to which the Brighton and Hove Gas Company submitted in the last session of Parliament, and the low prices at which they consented to supply 14-candle gas, for the purpose of out-bidding in committee the terms offered by the competing Aldrington, Hove, and Brighton Company, have thrown great difficulties in the way of disposing of the new shares they were authorized to issue. In compliance with a provision of their Act, that one half of the new shares should be sold by public auction, five hundred £20 shares, the dividends on which are limited to 7 per cent., were, on the 1st inst., offered for sale in lots of two each. The Brighton public do not appear to have been eager to accept the boon thus offered to them, for a large majority of the lots were passed without a single bidding, and the few that were ostensibly sold only realized par. The fact that the company are bound to supply gas in Brighton of high illuminating power at the low price of 3s. 6d. per 1000 feet, with a threatened competition, did not present an encouraging prospect to investors, and the Brighton public having secured a supply of gas at that price on the representation that it would yield ample profit, show their want of confidence in that opinion by refraining from purchasing shares, and leave the company to find the means of extending and carrying on their works as they can. Neither is there any alacrity to aid the once popular Aldrington, Hove, and Brighton Company, which has not, for months past, shown any signs of vitality, and seems to be only waiting patiently for decent interment when the funds already raised become exhausted.

The unfortunate Colonial and General Gas Company, which has been compelled to seek refuge in the Court of Chancery, appears, from a report of the proceedings before the chief clerk of Vice-Chancellor Stuart, to be at the mercy of a Spanish creditor for money advanced to the contractor. The history of this company, as disclosed in the course of the proceedings, is very instructive as to the manner in which the affairs of such companies are conducted, and the money of the shareholders hopelessly squandered. Application was made to the court to grant power to the official liquidator to pay to a banker at Murcia the sum of £1500, for the purpose of preventing the forfeiture of the concession and of the gas-works of the company in that town. The amount actually advanced to the contractor did not exceed £800, but it was stated to have been increased, "by law costs and bribery and corrup-"tion of one kind and the other," to the claim for £1500. It further appeared that the works had cost the company about £20,000, one half of which it was said represented the profit of the contractor. By the payment of the £1500 to the Spanish banker it is hoped to regain possession of the works, and prevent the forfeiture of the concession, otherwise the whole property would be lost. Another company is in the course of formation out of the wreck of the Colonial and General Company for lighting Murcia with gas, and it is hoped that by selling the works and the concession to them, £2000 may possibly be

recovered by the shareholders in that unfortunate concern. It would be difficult to present a stronger warning against speculating in newly-formed foreign gas companies with questionable concessions than is afforded by the break-up of this company and that of the Continental Gas and Water Company, which we noticed in our last. In the management of the former, indeed, there seems to have been some care taken to look after the shareholders' interests, for two persons were sent from England at different times to inspect the progress of the works, and one of the directors also proceeded to Murcia on a visit of inspection, and brought back a favourable report. Nevertheless, "one way or the other," the sum of £20,000 was expended, and the whole concern was mortgaged for an advance of £800.

In consequence of several inquiries respecting the state of the appeal by the Newcastle-on-Tyne Gas Company against the convictions for supplying gas that contained a greater quantity of sulphur than is permitted by their Act, we have ascertained that the appeal has been abandoned, the case having been compromised by an arrangement with the Corporation. On what terms the compromise was effected we have not been informed.

Communicated Article.

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ON DEFECTS IN THE APPARATUS GENERALLY USED FOR THE DETERMINATION OF BISULPHIDE OF CARBON IN COAL GAS, AND DESCRIPTION OF A NEW APPARATUS FOR ITS ESTIMATION.

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(*Continued from page* 698.)

The determinations given in the detail of the experiments of the next table possess much interest. They show the correctness of the view entertained at the outset of the employment of the "desulpurizing" vessel; that by burning the gas in a chamber of atmospheric air free from disturbance by draught or currents, a better or more perfect combustion would be ensured.

Table giving the Results obtained by burning several bulks of Coal Gas, in every instance divided exactly into two equal portions. The "Leslie" Burner, as commonly applied, was employed to burn one bulk at the rate of half a cubic foot per hour: the "Single" Jet (ordinary fishtail construction burner) was selected to burn the second bulk at such a rate that its combustion occupied as nearly as possible six hours.

Experiment.	Quantity of Gas analyzed.	Description of Burner used.	Weight of Sulphate of Barium obtained.	Whether "Desulphurizer" was used or not.	Amount of Sulphur calculated for 100 Cub. Ft.
First equally divided bulk	C 2½ c.ft.	Leslie	1·31	No	7·17 gr.
	D 2½ c.ft.	Single jet	2·60	Yes	14·24 gr.
Second equally divided bulk	E 2½ c.ft.	Leslie	1·82	No	9·97 gr.
	F 2½ c.ft.	Single jet	2·19	Yes	12·00 gr.
Third equally divided bulk	G 2½ c.ft.	Leslie	1·46	No	8·00 gr.
	H 2½ c.ft.	Single jet	2·29	Yes	12·54 gr.

Now, the difference between the numbers 1·31 and 2·60 in the experiments C and D is 1·29. And the calculation

1·31 : 1·29 :: 100 : 98·47

shows that in this case nearly *one-half* of the sulphur of the gas was lost from using the "Leslie" burner instead of the "single" kind *inside* the trumpet-tube, in the atmosphere controlled into steady inflow by passage through the pumice pieces of the "Desulphurizer." Similarly, for the bulk examined indicated by experiments E and F, the difference between the numbers 1·82 and 2·19 is ·37. Then

1·82 : ·37 :: 100 : 20·32

demonstrates that we have nearly 20⅓ per cent. loss by the "Leslie" burner in this case of comparative trial against the "single" jet and "Desulphurizer." Lastly, in respect of the difference between 2·29 and 1·46 of G H, we find, after making the calculation—

1·46 : ·83 :: 100 : 56·84

per cent. loss of sulphur arising from the same cause. This last experiment is a near approach to the average of the first two determinations C D and E F. For 98·47 + 20·32 = 118·79, the half of which is 59·39. But to add together the numbers obtained in the results of the experiments A B,* C D, E F, G H, at this juncture is very satisfactory, because it furnishes a striking confirmation of the correctness of the conclusions deduced at page 698—first, regarding the experimentally proved increased per centage average of sulphur shown when the action of the "single" jet is compared with the "Leslie" burner; and secondly, when the effect of burning the former is placed in juxtaposition with its action when governed by the transmission of the atmospheric air to burn it through the "desulphurizing" pumice arrangement. Therefore, if we take the average of the per cent. proportion of loss given in the first-made trial of the "single" jet inside the "Desulphurizer" and the "Leslie" burner brought into requisition in the usual manner, at page 698, and take the average of its addition to the average obtained in the results of the combustions of the three bulks comprised in the experiments C D, E F, G H, we get the total (from 73·78 + 98·47 + 20·32 + 56·84) = 249·41, which, divided by 4, gives the mean 62·35. A glance shows that the figures 62·35 is a most close approximation to the numbers, 66·00, derived from the other data of comparison at page 698, where the first superiority of the "single" jet over the "Leslie" burner is, to begin with, proved, together with the subsequent practical evidence of the enhancement of the "single" jet action by the addition of my pumice vessel.

If we now compare these results with those obtained by M. Ellissen in his important experiments, we shall see the justification for the remark I made at page 698, "that there is some reason to believe we really do succeed in burning and retaining *nearly* all the sulphur of the gas submitted to the action of the apparatus."

Let us now examine how this is supported by the experiments of M. Ellissen. At page 698 (quoted in approaching the conclusion of my last paper) it will be seen that he characterizes as perhaps the most exact, the method of oxidation by chlorine he put into operation to determine the sulphur, as a test of the method described by Dr. Letheby for that purpose. It proved, as will be seen upon reference, that 79·2 per cent. of sulphur was lost when Dr. Letheby's adaptation of vessels* was, upon that occasion, taken to estimate the sulphur in a like volume of the same gas. When Letheby's apparatus was compared with that arranged by Evans, the mean of ten experiments gave the following numbers:—For Letheby's, 4·75; for Evans's, 8·37. This result is equivalent to a loss of 76·21 per cent. through the employment of Dr. Letheby's arrangement for sulphur determination. Now, three of the *direct* experiments of comparison out of the four made with my apparatus agree very closely with the determinations by complete oxidation and those with the employment of Evans's apparatus given by M. Ellissen in his report. The three results are placed in contrast underneath:—

Loss per cent. by Letheby's apparatus when compared with process of complete oxidation (Ellissen), mean of two experiments	79·29
Loss per cent. by Letheby's apparatus when compared with process devised by Evans (Ellissen), mean of ten experiments†	76·21
Loss per cent. by Letheby's apparatus when compared with my three experiments, A B, C D, G H, mean of six experiments	76·36

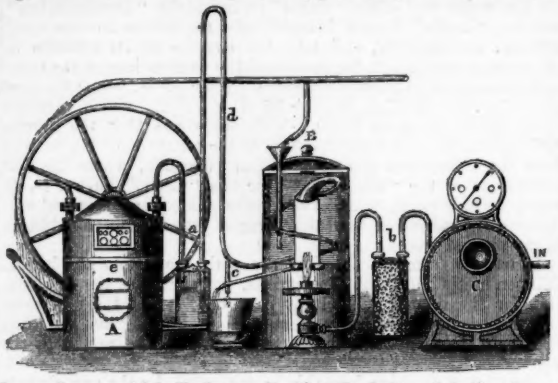
There is, then, it is proved, a very constant proportion of loss maintained when the burning action of the "Leslie" burner is compared with the above three distinct methods of estimation. M. Ellissen does not enter into a description of the complete method of oxidation by chlorine which he examined. I have applied this principle by causing the measured bulk of gas to slowly bubble through U-tubes containing an oxidizing agent of intense activity (hot hydrochloric acid and chlorate of potassium) in the attempts I have made to ascertain what we can effect towards total estimation of coal-gas sulphur by burning processes. I consider methods of combustion by some such plan of proceeding, if they can be held available, for many reasons are much to be preferred to, for instance, that of oxidation just alluded to. In the first place, an operator of considerable experience in chemical manipulation would be required to conduct the chlorate oxidation process, with any prospect of success (for it is a disagreeable experiment, and not wholly free from some danger), which will be evident further on, when I enter into an account of the way in which this is done; while the operations belonging to the much more simple system of burning the gas, as I have described it in these papers, I have often found is capable of performance by any person of moderate operative skill with the hands. I have had occasion to refer, as affording interesting results of a confirmatory character, to the apparatus devised by Mr. Evans for coal-gas sulphur estimation. I have been surprised to find many interested in the question unacquainted with this arrangement, so I will describe it here. When I have done so, as it will be presently necessary that I should call attention to the method of determination used by M. Ellissen where the measured volume of gas is slowly transmitted over hot lime, those who have followed me through this discussion of the sulphur determination question will then have had brought under their notice every plan for accomplishing this end which has yet been suggested.

Referring to the subjoined engraving of the apparatus arranged by Mr. Evans, A is a motive-power dry meter—that is, a meter which is driven by a water-wheel or clockwork, and, by the alternate contraction and expansion of the diaphragms, it acts as a

* Journal of Gas Lighting, vol. xiii., p. 698.

* *Chemical News*, vol. vii., p. 73.
† Journal of Gas Lighting, vol. xiii., p. 713.

pump, drawing the air or gas in at the inlet and discharging it at the outlet. B is a condenser. In the centre of this condenser is placed a white metal chimney, similar to the 7-inch glass chimney of an ordinary Argand burner. This chimney has a funnel-shaped top, connected to a 5-8ths spiral tin pipe, arranged in coils inside



the condenser, which discharges itself at the bottom into the pipe *c*, leading through the swan neck *d* to the inlet of the meter; at the bottom of this chimney is fixed a narrow glass gallery with an outlet-pipe, for the purpose of collecting all the moisture condensed in that part of the apparatus. A Bunsen lava burner is provided with a white metal dish, through the centre of which it is made to pass, so that the point of combustion is immediately above the dish. This burner is attached to the outlet of the experimental meter C, through which, of course, the gas to be examined is made to circulate for measurement, if a graduated gasholder be not at command. Let us suppose the whole of this apparatus connected as above described, and that we wish to determine the sulphur compounds in a given quantity of gas. Then the condenser B is to be filled with cold water, which is permitted to flow through the inlet funnel-pipe to the lower part of the condenser, the water at the surface, as it becomes successively heated, running away through the overflow-pipe. There is no necessity that this water supply for the condenser be run in at a rapid rate, for a very moderate quantity suffices to produce enough cooling effect. The small dish fastened to the burner is filled with strong ammonia; the gas ignited, and the burner then put under the condensing vessel, so that the flame may pass up the chimney. The products of the combustion are drawn through the spiral pipe, condensed there, and then flow through the small pipe at the bottom of the swan neck into a receiving vessel. The supply of ammonia to the burner is easily maintained by allowing it to drop from a small glass syphon-pipe into the dish surrounding the burner.*

In noticing the last estimation method which has been proposed —the so-called lime mode—I should quote M. Ellissen, who, I believe, was the first chemist to apply it. "By causing," he says, "the [measured volume of] gas to flow very slowly in a long tube filled with lime at a red heat (about 1832° Fahr.), *all the sulphur* contained in the gas combines with the caustic lime to form sulphuret of calcium and sulphate of lime. The aqueous vapour in the gas having the power of decomposing a portion of the sulphuret of calcium, it is useful [necessary] to pass the products of the decomposition into potassa, which will retain the sulphuretted hydrogen [so generated] driven off."

There can be little doubt as to the correctness of M. Ellissen's assumption that by this process the whole of the bisulphide sulphur is capable of removal. The determinations he effected by its application, when compared with the analyses made with Dr. Letheby's arrangement, are extraordinarily, and I think, unaccountably high. To extract the results, and place them underneath, will at once show this to be the case†:—

Comparison of the Modes of Testing the Amount of Bisulphide of Carbon in the same Coal Gas, by the "Lime Process" and the Plan given by Dr. Letheby.

	Letheby Apparatus.	Lime Process.	Loss by Letheby's Arrangement.
1	7·53 sulphur ..	9·23 sulphur ..	22·52 per cent.
2	6·88 „ ..	9·80 „ ..	42·44 per cent.
3	4·83 „ ..	43·16! „ ..	Nearly 8-9ths.
4	3·74 „ ..	33·36! „ ..	Nearly 8-9ths.
5	3·48 „ ..	28·00! „ ..	Little more than 7-8ths.
6	6·31 „ ..	9·88 „ ..	56·57 per cent.
Means	5·46 „ ..	22·24 „	

Now, there are great and remarkable discrepancies obvious upon examining the results embodied in this table. There is no sort of correspondence between the determinations of the experiments 3, 4, and 5, and those of 1, 2, and 6. The mean of the quantities of 1, 2, and 6, is equivalent to a loss of 40·73 per cent. from the "Leslie" burner having been used, which, from its close analogy with many results of experiments I have referred to, it is very evident is just and reasonable; but in the experiments 3, 4, and 5, where a deficiency is exhibited, in the two first instances, of nearly *eight-ninths* of the whole of the sulphur, and in the third case of above *seven-eighths*, I think we have very great reason to call in question their correctness. In fact, the application of this lime method is open to more than one serious objection besides its general tediousness. Thus, it is necessary to determine, before any result can be arrived at, the proportion of sulphur contained in the lime in its normal state, to be subsequently allowed for in the whole amount calculated from the barytic sulphate. To do this it is not quite possible to take a portion which may be considered to exactly represent an average of the whole, unless we powder the lime so finely that the transmission of the gas through the tube containing it is an impossibility. Then, again, as the whole of the lime which has been placed in the long tube to desulphurize the gas must, when the experiment is terminated, be brought into a state of solution, it is quite certain that this must entail the admixture of a large proportion of calcic salt, anything but favourable to the subsidence of the barytic sulphate from the solution when the precipitant is added. I believe, also, that it would be extremely difficult to free a small proportion of barytic sulphate deposited in a strong calcic solution of this kind, containing some thousands of grains of lime, even by copious washing with boiling water, from portions of these calcic salts, which, from what is now well known in regard to this subject, would probably, under these circumstances, adhere with great obstinacy to the precipitate. Considerations of this kind must, therefore, cause us to hesitate before receiving the determinations 3, 4, and 5, as being conclusively exact.

However, for all this, there can be no doubt that, in any case, the effect of the "Leslie" burner, when employed, as commonly done, to burn the gas, is almost always so radically bad that its use for this purpose, as I have before said, should be abandoned altogether. In one or two instances only, amongst numerous others where, with the utmost care, I have examined the consuming power of this burner, has its performance been at all satisfactory. Besides a thorough examination of the capacities in this particular of this "Leslie" burner, I have also subjected a well-made "Bunsen" burner to a similar investigation. I was surprised to find, as the experiments presently to be described will demonstrate, that its power in this respect, though much superior to the "Leslie" sort, is yet very frequently inferior to the "single" (fishtail) burner, when both were allowed to consume the gas at the rate which has been mentioned occasionally in this paper.

The following table shows the behaviour of the "Leslie" burner when placed to consume the gas *inside* the "desulphurizing" vessel. It is compared in the two experiments with the "single" jet, whose action I have said I think will be generally found to surpass all others for accomplishing the most complete combustion of coal gas, if we are to regard the conversion of its bisulphide of carbon compounds into sulphurous acid as an indication of this power.

Table showing the Results obtained by burning two equal measured volumes of Coal Gas to compare the "Leslie" Burner with the "Single" Jet, both being employed inside the "Desulphurizing" Vessel.

	Experiments.	Quantity of Gas analyzed.	Description of Burner used.	Weight of Sulphate of Barium obtained.	Amount of Sulphur calculated for 100 Cub. Ft.
First bulk	I ..	2½ c. ft. ..	Leslie ..	1·70 ..	9·31 gr.
	K ..	2½ c. ft. ..	Single ..	1·61 ..	8·84 gr.
Second bulk	L ..	2½ c. ft. ..	Leslie ..	2·00 ..	10·96 gr.
	M ..	2½ c. ft. ..	Single ..	2·10 ..	11·50 gr.

In the experiments I K, the advantage is in favour of the "Leslie" burner to the extent of 5·31 per cent.; M L M, on the other hand—the "single" jet—has, as usual, the higher number, corresponding to an advantage in its favour equal to 5·00 per cent. For—

2 : ·1 :: 100 : 5·00.

Although the steadier combustion is thus induced by the control exercised over its fluctuating, flickering tendency, when so enclosed in the regular ascending column of atmospheric air of the interior of the "Desulphurizer," nevertheless, even under these circumstances, as the ensuing examples demonstrate, its combustion is still liable to be very uncertain and irregular.

A bulk of gas was divided into two equal measured volumes, and both burned by the *same* "Leslie" burner, under precisely similar conditions, inside the "Desulphurizer."

Experiments.	Quantity of Gas analyzed.	Description of Burner used.	Weight of Sulphate of Barium obtained.	Amount of Sulphur calculated for 100 Cub. Ft.
N ..	2½ cubic feet ..	Leslie ..	1·50 ..	8·22 gr.
O ..	2½ cubic feet ..	Leslie ..	2·10 ..	11·50 gr.

Then the calculation—

8·22 : 3·28 :: 100 : 39·9

decisively proves that determinations made with the most accurate precautions with this "Leslie" burner are subject to a loss of, in round numbers, *forty per cent.*, when every condition in the experiments of comparison is observed with the most perfect regularity.

An addition to the series of experiments made with this burner is appended underneath.

* See the description of this apparatus in Mr. Bannister's "Gas Manipulation," to which I am indebted, for the most part, for this account of it.

† Journal of Gas Lighting, vol. xiii., p. 717.

Results obtained by burning two equal measured bulks of Coal Gas by the "Leslie" Burner, in the one case open to the air, and in the other inside the "Desulphurizer."

Experiments.	Quantity of Gas analyzed.	Description of Burner used.	Whether "Desulphurizer" was used or not.	Quantity of Sulphate of Barium obtained.	Amount of Sulphur calculated for 100 Cub. Ft.
P	2½ c. ft.	Leslie	Yes	2·02	11·06 gr.
Q	2½ c. ft.	Same	No	1·50*	8·22 gr.

The superiority in burning power communicated to the "Leslie" burner by enclosure in the "Desulphurizer" is thus proved to be equivalent to a little under *thirty-four and a half* per cent. over the usually adopted "open"-air plan. For—

8·22 : 2·84 :: 100 : 34·54.

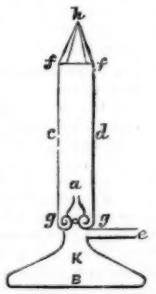
This ratio of superiority, it is somewhat curious to remark, coincides very closely with the relations found at page 698 to exist between the "single" jet burned under the trumpet-tube on the one hand, and inside the "Desulphurizer" on the other. The proportion in favour of the latter principle, it will be seen on reference, was then found to be 32 per cent.

The results obtained in the experiments I K, L M, P Q, if further confirmed, I consider sufficient to justify the use in analysis of the "Leslie" burner, but only in conjunction with the "Desulphurizer," to regulate its combustion. If due attention be paid to the proper adjustment of the pressure of the gas, as delivered for combustion to its orifices, I think these as high as that obtained by using the "single" jet may be possibly ensured. And, as some economy of time may be effected by the employment of the former burner, this is perhaps worthy of remark in this place.

Of the capabilities of the "Bunsen" burner for consuming the bisulphide of carbon compounds into sulphurous acid, when compared with the "single" jet and "Leslie" burner:—

I anticipated a very perfect combustion by the employment of this burner. Bearing in mind the great probability, from the experimental facts and reasoning I have adduced, that we now have at control methods by which we can estimate the whole of the sulphur of coal gas bisulphide without resorting to disagreeable and complicated methods by chlorine oxidation or lime, I have considered it well worth while to examine minutely the action of the various burners which have been hitherto employed for this purpose, before finally proceeding to describe what processes I have adopted, with the view to compare an exact system of analysis with the best results obtained by the readily performed modes of combustion, of which much description has been given in these investigations. But supposing it should eventually be found that combustion by any description of jet fails to effect the conversion of the *entire* amount of the bisulphide sulphur into sulphurous acid—for the facility with which some portions of gas obstinately resist combustion in very hot burning jets is really extraordinarily curious—are we quite justified in holding a gas company responsible for any certain proportion of this bisulphide sulphur which, under normal conditions of combustion, effectually resists burning into deleterious sulphurous compounds, from which no injurious atmospheric contamination can occur? In order to thoroughly carry out this line of reasoning, the selection of the most perfect of burners to ensure the most complete or greatest possible conversion of the bisulphide sulphur into a compound capable of entire retention, in some form of receiver which should unequivocally absorb it, has not escaped my close attention.

The following furnishes a complete inquiry into the power in this regard possessed by the Bunsen burner. As the principle upon which this Bunsen burner may not be understood by many who may follow me in these investigations, I will describe it. The Bunsen burner in its simplest form consists of a small tube, having an orifice *a* for the emission of the required stream of gas screwed into a foot B; *c d* is a metal tube, fitting a long screw-thread round about *a*—as usually made, of from a quarter of an inch to half an inch internal diameter—into which the gas flows from the orifice *a*, when, by turning on the supply-tap, the gas is delivered to it through the inlet *e*. The metal tube *c d*, also round about *a*, is perforated with several holes, so that as the gas emerges from *a*, and is set on fire on the surface of the tube at *f f*, atmospheric air rushes in through these, intermingles with the gas passing out at *a*, and then causes the production of a blue smokeless flame as the gas and portions of atmospheric air burn together at the top of the tube at *f f h*. The upper part of the foot support *k g g* is generally made with a screw-thread, so deep as to permit of the tube *c d* being raised higher or lower as may be desired; at the same time allowing a more or less current of atmospheric air, by the consequent enlargement or contraction of the openings around its lower part, to flow in to suit the convenience of the operator. In this way a well-constructed burner of this kind will afford a jet of gas varying from a steady blue smokeless flame to one of blow-pipe intensity. From a mere physical examination of the kind of flame obtained by a careful adjustment of the supply of gas and the accompanying influx of air to consume it, one would be fully inclined to believe that the combustion of the gas could not be made by any contrivance of the kind more perfect. We shall see, however, as the next table proves, that this is by no means uniformly the fact, curious as such a result may appear.



* The arrangement of the apparatus in this experiment was the same as described at page 658, vol. xiv., with this exception, that the addition of the long tube *y* to the second receiver was omitted. I should mention that its employment I have found to be decidedly instrumental in increasing the unsteadiness of combustion, so difficult to obviate from irregular currents of air, especially in the "open"-air Leslie plan.

Table of Comparison of Results obtained by testing the "Bunsen" Burner with the "Leslie" Burner and the "Single" Jet.

	Experiments.	Quantity of Gas analyzed.	Description of Burner used.	Whether "Desulphurizer" was used or not.	Amount of Sulphur obtained.	Quantity of Sulphur in 100 Cub. Feet.
First volume of gas, equally divided	R	2½ c. ft.	Bunsen	Yes	·437	17·48 gr.
	S	2½ c. ft.	Leslie	No	·265	10·60 gr.
Second volume of gas, equally divided	T	2½ c. ft.	Bunsen	Yes	·301	12·05 gr.
	V	2½ c. ft.	Fishtail	Yes	·287	11·48 gr.
Third volume of gas, equally divided	U	2½ c. ft.	Fishtail	Yes	·309	12·36 gr.
	W	2½ c. ft.	Bunsen	Yes	·364	14·56 gr.
Fourth volume of gas, equally divided	X	2½ c. ft.	Leslie	Yes	·431	17·24 gr.
	Y	2½ c. ft.	Bunsen	Yes	·472	18·18 gr.
Fifth volume of gas, equally divided	Z	2½ c. ft.	Bunsen	Yes	·369	14·76 gr.
	1	2½ c. ft.	Single	Yes	·280	11·20 gr.
Sixth volume of gas, equally divided	2	2½ c. ft.	Single	Yes	·328	13·12 gr.
	3	2½ c. ft.	Bunsen	Yes	·287	11·48 gr.
Seventh volume of gas, containing a little bisulphide of carbon diffused in it, similarly divided	4	2½ c. ft.	Single	Yes	·712	28·48 gr.
	5	2½ c. ft.	Bunsen	Yes	·561	22·44 gr.
Eighth volume of gas, with some bisulphide, also diffused, divided as last	6	2½ c. ft.	Single	Yes	·671	26·84 gr.
	7	2½ c. ft.	Same	Yes	·774	30·96 gr.

With the exception of the experiments with the eighth volume, the combustion of each occupied about six hours.

Note.—In experiment 6, a very steady current of oxygen gas, transferred from a gasholder, the flow of which was exactly adjusted by being made to bubble through a U-tube of water, was conveyed into the interior of the "Desulphurizer." It was supplied during the whole continuance of the combustion.

Without now entering into a minute account of this application of oxygen gas to burn the gas (it possesses many features of great interest), or proceeding to draw any inference from the last given tabulated results,* I will merely observe here that, seeing from the experiments upon the eighth volume of gas it appears that, no matter whether the gas was wholly consumed or not, the condensing arrangement—notwithstanding that two receivers were used—was clearly inefficient in retaining the products of the combustion, I now proceed to describe the apparatus I have devised, by which no sulphurous products can escape retention in the condensing-receivers as fast as they are generated by the burning jet.

We shall see that we shall then have the solution of the following interesting questions, which have never yet been given:—

1. What limit (if there be any) is there to the conversion of the bisulphide of carbon compounds in coal gas into sulphurous acid, when consumed by various burners in atmospheric air?

2. How can the products of such combustions be completely condensed?

(*To be concluded.*)

* In every determination of sulphur comprised in this table I employed a system of volumetric analysis, with a standard solution of chloride of barium—capable of being practised by a mere tyro in manipulative arts—with a great saving of time and trouble. The amount of sulphur in a solution, by this means, I can ascertain in twenty minutes; while otherwise, by the weighing system, at least thirty hours is required for the greatest accuracy. This mode I hope to give in my next communication.

Register of New Patents.

787.—Thomas Joseph Reader, of 17 and 20, Cullum Street, Fenchurch Street, in the City of London, for "*Improvements in force-pumps.*" Patent dated March 16, 1866.

In constructing a double-acting pump according to this invention, the pump-barrel or cylinder may be fixed in a horizontal position or in an upright position. When the barrel or cylinder of a force-pump is fixed in a horizontal position the piston-rod works through a stuffing-box formed on one of the end covers of the cylinder or barrel. At each end of the cylinder or barrel and at its under side is formed an induction way or opening for the water from the source of supply to enter the cylinder or barrel. To this opening or induction way is fixed the upper end of a suction or supply pipe having a lifting-valve in a valve-chamber forming part of the cylinder, where the suction-pipe is fixed by means of a screw-coupling or otherwise, so as readily to admit of the valve being got at when desired. At the upper side and at each end of the cylinder or barrel is formed an outlet-passage for the water to pass out of the cylinder or barrel. Over each of these outlet-passages is a valve arranged to open outwards, and connected with each passage is a pipe to convey the water in any desired direction.

814.—Alexander Angus Croll, of Coleman Street, in the City of London, civil engineer, for "*Improvements in arranging conduits or channels for the reception of gas, water, and other mains, tubes or pipes, and telegraphic wires, also for the conveying away of smoke or noxious vapours from buildings, and for the ventilation of buildings and other places.*" Patent dated March 19, 1866.

The present system adopted of burying gas and water mains and some of the telegraphic wires under ground is very objectionable, on account of the inconveniences occasioned by the frequent stoppage of main thoroughfares for the repairs of such mains or lines, as well as on account of the costs involved. To remedy these evils it has been proposed to form subways under the roads, but these are also objectionable on account of the danger arising from accumulations therein of escaped gas and foul air subject to explosion. According to these improvements, peculiarly formed conduits or channels are employed for the reception of the various gas, water, or other mains, pneumatic despatch, or other tubes, and also telegraph wires. These conduits or channels are, by preference, formed of metal, supported on columns or piers above the surface of the ground and along the centre of the road or other way, or they may be applied under the footway. They have covers to them formed in sections connected by dovetail or socket-joints, and they are held in position by screwing or by bolts and locks, so as to be removable in such sections, forming separate chambers or compartments, to facilitate separate access to the parts enclosed. Escape or test passages or outlets are applied at intervals corresponding with the separate compartments or chambers to ascertain whether any escape has taken place to the fluids in the respective tubes.

When these channels or conduits are supported on a double row of columns or piers the space underneath them and between the rows of supports thereto may be paved and serve as a covered way to shelter foot passengers and facilitate their crossing from one side of a street to the other; or they may be supported sufficiently high to be out of the way of vehicles on a single row of columns, and thereby save space.

The columns or piers are formed with broad bases, and should be sunk beneath the surface of the road, so as to resist lateral strain. The sides of these conduits or channels are provided with shelves or other receptacles for plants or flowers, enclosed under glass covers, if desired, or they may have other means of ornamentation, or be used for advertising purposes. Subsidiary or local mains from the elevated conduits are employed in channels under the pavement, or along the fronts of buildings, and are supplied at intervals from the general mains.

The supporting columns or piers to the raised conduits or channels are employed as channels for conducting off smoke or vapours from neighbouring buildings or other places, fans or other exhausting apparatus being employed to draw or force such smoke or vapour through the piers or columns, and the channels connecting them with the neighbouring buildings.

Conduits or channels arranged as described will afford means of ready access at all times to the various mains or tubes or telegraphic wires, without impeding the traffic of the road, and the telegraphic wires will be preserved from the injurious effect of atmospheric influence. The raised conduits serve also to support street-lamps, and the pillars or piers for the fire and other water outlets.

827.—William Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements in the process of and apparatus for distilling petroleum and other mineral oils.*" A communication. Patent dated March 20, 1866.

In the ordinary process of distilling petroleum, it is necessary, in order to raise the vapour and overcome the pressure of the atmosphere, to bring the heat to a comparatively high temperature, the effect being usually accomplished by the direct application of fire to the retort or still. The crude oil is also deposited in the still in charges, it being generally impracticable to apply a continuous feed to a retort for petroleum where so high a degree of heat is used as is necessary to raise the vapour against atmospheric pressure. In conducting the operation in this manner, not only is the material to be distilled liable to burn on the sides of the retort, but a large amount of gas is evolved by this excess of heat, and imparts to the oil offensive odours, and increases its liability to explode; and, furthermore, the process is not complete without deodorization by the employment of acids and alkalies after the products have passed from the still. The residuum is also burned, and greatly injured by the same excess of heat. To obviate these difficulties is the object of the present invention. By removing the pressure of the atmosphere, and applying the heat by steam (preferably superheated), all that is desired to evaporate of the lighter hydrocarbon oils is effected without incorporating with them deleterious gases or offensive odours; and also the residuum is reduced to a heavy gravity without burning or otherwise injuring the oleaginous and valuable properties of the same.

The claim is for the arrangement and combination of parts of apparatus, whereby a continuous feed in a vacuum still for petroleum and other mineral oils may be effected, and the method of distilling petroleum and other mineral oils *in vacuo* by the application of heat by means of a steam-jacket, or by steam passing through coils or pipes, or caused to issue from perforations made therein.

853.—William Clark, of 53, Chancery Lane, in the co. of Middlesex, engineer and patent agent, for "*Improvements in steam-pumps.*" A communication. Patent dated March 22, 1866.

The first part of this invention relates to certain improvements in the valve motion of the steam-cylinder, whereby the slide-valve is changed at the end of each stroke of the piston by the action of parts, which are arranged in the interior of the cylinder, and operated upon by the piston or parts attached to the same.

The second part of this invention relates to certain improvements in the valves and valve-chamber of the pump-cylinder. The valves are constructed of discs, provided with annular recesses, which are filled with india-rubber or other suitable soft and elastic material, so that an elastic face is obtained, whereby metallic contact between the valve and its seat is avoided, and a valve is obtained which can easily be kept tight, and which is not liable to wear out.

862.—William Edward Newton, of 66, Chancery Lane, in the co. of Middlesex, civil engineer, for "*Improvements applicable to the treatment of the substances used in the purification of gas.*" A communication. Provisional protection only obtained. Dated March 23, 1866.

This invention has for its object, at a very light expense, and in a very simple manner, not merely to renovate the purifying material used in the manufacture of coal gas—which, through continued use, has become exhausted, and which material is formed either by the mixture of a salt or oxide of iron with hydrate of lime or salt of lime or prepared from oxide of iron alone (Laming's purifying mass)—but to make the same far more effective than it was at first. This object is effected by the conversion of the free sulphur, which has accumulated in the purifying mass after lengthened use, into sulphuric acid. The free sulphur which the purifying material extracts from the gas destroys its purifying power, but when the sulphur is removed therefrom this power is renewed, so that the material may be used again and again. By the addition of metallic iron to the purifying substance, when it has become completely saturated with sulphur, the sulphur becomes converted into sulphuric acid and sulphate, which may be washed out and removed from the purifying material.

896.—William Alexander Lyttle, officer of the secretary's department, General Post-Office, London, for "*Improvements in the means and apparatus for the distillation and rectification of hydrocarbon and other volatile oils.*" Provisional protection only obtained. Dated March 27, 1866.

In performing this invention oil vapours produced by the coal or other retort or oil-still are refrigerated in a manner similar to that in which the steam is condensed in a condensing steam-engine—viz., by the admission of cold water into the receiver or condenser of the retort or still. For this purpose any desired retort or still is made use of, and to this is connected, by means of a pipe, a receiver so constructed that a "rose" or other jet placed inside it at its top for the admission of cold water will be at such a distance from the bottom of the receiver that the cold water will have a sufficient fall to admit of its exercising an efficient cooling influence on the oil vapours, whether the water may be made to fall as a shower or simply to run down the inner surface of the receiver, as water is generally allowed to run down the sides of a urinal. The bottom of the receiver should either be open, and dip, like a gasholder, into a reservoir of water, or else should be provided with openings for running off the accumulating water and oil. It is evident that by making openings in the receiver or in the above-mentioned reservoir, at different levels, the oil and water can be drawn off separately.

898.—Charles Thieme Liernur, engineer, of the firm of Liernur, Krepp, and Co., American engineers, of Frankfort-on-the-Maine, for "*A pneumatic method for the inoffensive removal of all fluids, solids, and gases from water-closets or privies, and their conduits, and of storing said materials so that they may be applied in their natural unchanged form to agriculture and other branches of industry.*" Patent dated March 27, 1866.

The claim in this invention is the instantaneous daily inodorous emptying of privies and their pipes, by suddenly opening slide or other valves which place them in connexion with street reservoirs out of which the air has been pumped, and employing the apparatus substantially as described; also employing a pneumatic waggon having attached to its reservoir a steam-engine driving an air-pump for the purpose of exhausting the air from the conduits and subterranean reservoirs which communicate with the surrounding privies, in order that the said privies and their conduits may be cleaned and emptied whenever desired, by atmospheric pressure, and their contents transferred to the reservoir of the said pneumatic waggon, and the whole moveable apparatus being so arranged that the foul air out of such reservoirs shall be passed through the fire of the steam-engine furnace in order thus to purify substantially as described. Also the inodorous collection, storeage, and transport of unchanged and undiluted human excrements in air and water tight portable barrels for application to agricultural and other industrial purposes substantially as described; and also placing barrels containing manure on ploughs for the purpose of discharging the contents of the said barrels into the furrows made by the ploughshare, and closing the said furrows again immediately afterwards by scrapers, the whole contrivance to be adapted to the particular construction of the plough substantially as described; also the mode of manuring meadow land and preserving the manure substantially as described.

908.—John Parkes the younger, of Oaken Gates, in the co. of Salop, ironmonger, and James Parkes, of Oaken Gates aforesaid, ironmonger, for "*Improvements in apparatus for measuring liquids.*" Patent dated March 29, 1866.

In constructing a measuring apparatus according to this invention, a metallic vessel open at the top is used, made by preference of a conical figure, the said vessel being connected by a pipe at its bottom with the reservoir containing the liquid to be measured. The said vessel is hereinafter called the measuring-vessel. The bottom of the measuring-vessel has also a pipe by which the measured liquid is drawn off. Each of the pipes described is provided with a stop-cock. In the said measuring-vessel is a float, connected by a chain to a pulley, turning freely on its bearings, situated on the framing of the apparatus. The weight of the float is nearly counterpoised by a balance-weight. The float in the measuring-vessel is guided on its rising and falling motions by guide-rods, and the chain passing to the pulley described is guided by a lower pulley. On the axis of the pulley to which the chain from the float is connected is an index-finger or pointer, which said index-finger or pointer on the motion of the pulley traverses a graduated dial on the apparatus. The graduations on the said dial indicate the capacity of the measuring-vessel at different levels.

In measuring a liquid by the use of the apparatus described, the stop-cock of the delivery-pipe is closed, and the stop-cock of the pipe passing to the reservoir is opened, and liquid from the said reservoir passes into the measuring-vessel. As the measuring-vessel is filled with the said liquid, the float is raised, and communicates through the pulley, to which it is fastened, motion to the index-finger or pointer, which is made to traverse the graduated dial, and indicate thereon the quantity of liquid passed into

the measuring-vessel. As soon as the required quantity of liquid has been measured, the stop-cock of the reservoir-pipe is closed, and that of the delivery-pipe opened, and the contents of the said measuring-vessel are drawn off by the last-mentioned pipe.

941.—Edward Brook the younger, of Huddersfield, in the co. of York, manufacturer of sanitary tubes and other fire-clay goods, for "*Improvements in the construction and arrangement of apparatus and material for effecting the deodorizing of noxious gases arising from sewers and drains, and for the more effectual ventilation of such sewers and drains.*" Patent dated April 2, 1866.

This invention relates to further improvements in the construction and arrangement of apparatus and material for effecting the deodorizing the noxious gases arising from sewers and drains, and for the more effectual ventilation of such sewers and drains, upon a previous invention, for which letters patent were granted to the present patentee, dated Sep. 25, 1865, No. 2451.

The practice heretofore has been to trap or prevent the escape of noxious effluvia or gases at the gullies or stench-traps, which gullies serve to convey the surface water from the streets to the drains or sewers. This invention consists, first, of a method of constructing and arranging gullies and deodorizing medium in such a manner as to deodorize and discharge the gases, which is effected by constructing a gully or cesspit of earthenware or iron, which by a branch or bend and pipes communicates with the sewer or drain. Upon or communicating with such branch or bend is a box or chamber, the bottom of which is perforated and communicates by an opening with the upper part of the gully or cesspit. To the interior of the said box or chamber is introduced a tray or screw of galvanized wire or iron, containing charcoal or other deodorant. The noxious gases arising from the sewer or drain pass through the perforated bottom of the chamber or box, and through the charcoal, and thence escape through an aperture in the end of the box or chamber to the ordinary surface-grating. The gases are prevented from arriving at the surface-grating otherwise than by the way of the chamber or box, by means of a trap constructed in the ordinary manner.

The second part of the invention relates to the deodorizing of the gases in their passage from the sewer or drain by way of rain-pipes. This is effected by removing one of the pipes, and connecting the rain-pipe with the sewer. The pipe so removed is replaced with a similar one provided with a branch or socket, in which rests a tray containing charcoal. At the foot of the rain-pipe is placed a syphon, bend, or trap, communicating with the pipes leading to the sewers or drains.

982.—William Henry Phillips, of Nunhead, in the co. of Surrey, engineer, for "*Improvements in rotary pumps.*" Patent dated April 5, 1866.

This invention consists in so arranging rotary apparatus for lifting and forcing water or other fluids that the momentum communicated to such fluids by the rotation of the apparatus may be used as a constantly communicated force for lifting or raising the water or other fluid, in place of such force being allowed to disperse itself as in rotary pumps, when the fluid is lifted and forced by the action of the centrifugal force only. In carrying out this invention, a circular chamber is mounted upon a stationary hollow axis, such chamber being caused to revolve upon such axis with considerable velocity.

992.—James Young, of Limefield, in the co. of Mid Lothian, N.B., gentleman, for "*Improvements in distilling.*" Patent dated April 6, 1866.

This invention consists in using a revolving retort or still, containing a spiral made of iron or other suitable material, which is placed either in a horizontal or inclined position, and caused to revolve. The substance to be distilled may be a solid or a liquid, the whole or part of which is volatile, being introduced into the retort or still at one end, and, being guided by the spiral, is conveyed towards the other end, where the portion not volatilized is discharged, the volatile portion being driven off while passing through the heated retort.

1023.—James Sparrow and Samuel Poole, both of Frood Iron-Works, near Wrexham, in the co. of Denbigh, ironmasters, for "*Improvements in collecting the heated gases from blast-furnaces so as to utilize the same.*" Patent dated April 10, 1866.

This invention has for its object certain improvements and arrangement of apparatus for collecting and utilizing heated gases thrown off from blast-furnaces, and by one modification of the invention the improvements may be applied to furnaces whilst in blast, in which case the apparatus is so constructed and arranged that the major part thereof is applicable when it is necessary to reconstruct the furnace or take down the tunnel-head and neck of the furnace. To apply this invention to a furnace out of blast, a curved chamber is constructed, by preference of boiler-plate, the inner external side of which internally coincides, and may be in immediate contact with the exterior vertical surface of the tunnel-head above the feed openings, and which chamber may be rectangular, in vertical section, or of any other convenient form. This curved chamber encompasses about six-sevenths of the exterior of the tunnel-head, and is closed at each end, where it is provided with doors or port openings for convenience of admission into the curved chamber for convenience of cleaning and repairing the same. The bottom of the curved chamber is provided with rectangular vertical tubes or passages, one between each feed opening or fitting hole, which open into the bottom of the rectangular chamber, and extend downwards through the foot-plates of the feeding-stage and the brickwork of the neck of the furnace, so as to extend about 6 feet below the charge, where they open out through the sides of the furnace, the lower ends being constructed with lateral funnel-shaped mouths. Thus it will be seen that, if there are five feed openings or mouths in the neck of the furnace, there will be five of these vertical pendant pipes, which form so many passages for the heated gases from the furnace to the curved chamber, which is of an area equal to about two of the vertical passages, as this will be found sufficient for, as the centre passage will open out into the curved chamber formed on the side of the centre of the curved chamber, and which lateral chamber is fitted on the under side with a large pipe or passage which extends downwards, and by which the heated gases are carried to the steam-boiler or other position where it is desired to utilize the waste heat carried off from the blast-furnace by the apparatus. In this modification of the invention it is preferred to form the vertical passages and curved chamber, with its lateral chamber, from boiler-plates.

APPLICATIONS FOR LETTERS PATENT.

2762.—Philip Albert Muntz, of Keresley, near Coventry, in the co. of Warwick, gentleman, for "*Improvements in the manufacture of metal tubes.*" Oct. 26, 1866.

2788.—Charles M'Beath, of Blackburn, in the co. of Linlithgow, N.B., carpenter, for "*Improvements in the treatment or distillation of shale, coal, and other bituminous substances, and in the means or apparatus employed therefor.*" Oct. 29, 1866.

2809.—Matthew Piers Watt Boulton, of Tew Park, Oxfordshire, Esq., for "*Improvements in apparatus for employing the motive power of jets of fluid.*" Oct. 30, 1866.

2827.—James John Holden and Sealy James Best, both of Bermondsey, in the co. of Surrey, engineers, for "*Improvements in the doors or closures of gas-retorts, whereby to facilitate the charging and withdrawing their contents by machinery.*" Oct. 31, 1866.

2840.—Thomas Chatwin, of Birmingham, in the co. of Warwick, machinist, for "*Improvements in screw-stocks and tube-cutters.*" Nov. 2, 1866.

2841.—George Watson, of the firm of Watson and Stewart, of Brisbane, in the colony of Queensland, and of Glasgow, in the co. of Lanark, N.B., plumber and gas-fitter, for "*Improvements in reflectors and ventilators in connexion with gas and other lights.*" Nov. 2, 1866.

2847.—Josiah Harris, of 41, Threadneedle Street, in the City of London, for "*Improvements in apparatus for the production, distillation, and refining of hydrocarbon and other oils from shale, cannel, coal, peat, lignite, or other bituminous minerals.*" Nov. 3, 1866.

2871.—John Richardson Wigham, of Albany House, Monkstown, in the co. of Dublin, Ireland, gas and lighthouse engineer, for "*Improvements in illuminating lighthouses, private residences, railway stations, mills, factories, and other buildings, and in apparatus and gas-burners employed for that purpose.*" Nov. 6, 1866.

2873.—Nathaniel Fortescue Taylor, of 8, Manby Street, Stratford, in the co. of Essex, gas engineer, for "*Improvements in means for operating on air or aëriform fluids by hydrocarbons for purposes of illumination.*" Nov. 6, 1866.

2883.—Charles James Robinson, of 3, Old Church Yard, Liverpool, for "*Improvements in pump-valves, stop and let-off cocks or valves, especially adapted for hydraulic presses and high-water pressure.*" A communication. Nov. 6, 1866.

2889.—William Edward Gedge, of the firm of John Gedge and Son, of 23, Southampton Buildings, Chancery Lane, in the co. of Middlesex, patent agent, for "*An improved combination of apparatus fitting within every sort of chimney, and preventing any smoke being driven back into apartments.*" A communication. Nov. 7, 1866.

2908.—James Thomson, of New Wandsworth, in the co. of Surrey, for "*Improvements in gas-stoves for heating and cooking.*" Nov. 8, 1866.

2909.—George Shaw, of Birmingham, in the co. of Warwick, patent agent, for "*Improvements in the manufacture of coke, and the small coke called breeze, and in the manufacture of coal gas.*" A communication. Nov. 8, 1866.

GRANTS OF PROVISIONAL PROTECTION.

2598.—Hugh Forbes, of 184, Euston Road, N.W., in the co. of Middlesex, for "*Improvements in apparatus for the raising and propelling of water or other fluids, applicable likewise as a ship-propeller, motive power, fan, meter, and for other purposes.*" Oct. 9, 1866.

2606.—George William Shinner, of the Strand, in the co. of Middlesex, for "*Improvements in the means of and apparatus for utilizing sewage matters and liquids.*" Oct. 9, 1866.

2685.—Alfred Vincent Newton, of 66, Chancery Lane, in the co. of Middlesex, mechanical draughtsman, for "*Improvements in the process of distilling petroleum and other oils or substances.*" A communication. Oct. 17, 1866.

2733.—James Greenshields, of Glasgow, in the co. of Lanark, N.B., crude oil distiller, for "*Improvements in making gas and coke.*" Oct. 23, 1866.

INVENTION PROTECTED FOR SIX MONTHS BY THE DEPOSIT OF A COMPLETE SPECIFICATION.

2759.—George Tomlinson Bousfield, of Loughborough Park, Brixton, in the co. of Surrey, for "*Improvements in the manufacture of gases for the purpose of producing heat and the application thereof to metallurgical operations.*" A communication. Oct. 25, 1866.

NOTICES TO PROCEED.

1628.—Benjamin Franklin Stevens, of 17, Henrietta Street, Covent Garden, in the co. of Middlesex, gentleman, for "*A new or improved method of treating permanent inflammable gases, whereby greater heat is obtained therefrom.*" A communication. June 15, 1866.

1656.—James Parker, of 6, Lilford Road, Camberwell, in the co. of Surrey, gentleman, for "*Improvements in motive-power apparatus applicable for propelling vessels, for raising water, and for other purposes.*" June 22, 1866.

1697.—James Young the younger, of Limefield, in the co. of Mid Lothian, N.B., gentleman, for "*Improvements in apparatus for the treatment of hydrocarbon oils.*" June 26, 1866.

2598.—Hugh Forbes, of 184, Euston Road, N.W., in the co. of Middlesex, for "*Improvements in apparatus for the raising and propelling of water or other fluids, applicable likewise as a ship-propeller, motive power, fan, meter, and for other purposes.*" Oct. 9, 1866.

2679.—Julius Bronner, of Frankfort-on-the-Maine, Prussia, for "*Improved fixing of draught apparatuses and their respective supports on all kinds of gas-burners, and improved gas-burners and draught apparatuses in connexion with that.*" Oct. 17, 1866.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £50 BEFORE THE EXPIRATION OF THE THIRD YEAR.

2467.—William Lorberg, "*Improvements in the manufacture of gas from tar.*" Oct. 8, 1863.

2549.—Edward Henry Cradock Monckton, "*Improvements in the means of uniting or joining plates or sheets of metal, which invention is applicable to the construction of boilers, tubes, and other useful purposes.*" Oct. 17, 1863.

2582.—Nathaniel Fortescue Taylor, "*Improvements in increasing the illuminating power of coal gas, and in the means or apparatus employed therein.*" Oct 21, 1863.

2598.—John Walter Friend and Baldwin Fulford Weatherdon, "*An improved valve and valve gear for regulating the passage or flow of fluids.*" Oct. 22, 1863.

2707.—Stephen Holman, "*Improvements in machinery for raising and forcing fluids, parts of which improvements are also applicable to steam-engines, blast-engines, exhausters, and other machines.*" Oct. 31, 1863.

2708.—Edward Jones, "*Improvements in the manufacture of bricks, drain-pipes, traps, sewage-tanks, water-closet pans and valves, and the machinery and apparatus necessary for the same.*" Oct. 31, 1863.

2716.—John Macintosh, "*Improvements in taps or cocks for liquids or gases.*" Nov. 3, 1863.

PATENTS WHICH HAVE BECOME VOID

BY REASON OF THE NON-PAYMENT OF THE ADDITIONAL STAMP DUTY OF £130 BEFORE THE EXPIRATION OF THE SEVENTH YEAR.

2184.—Charles Cowper, "*Improvements in mixing or combining and deodorizing oil made from gas tar and other oils.*" Sept. 27, 1859.

2320.—James Carrick, "*Improvements in commodes, water-closets, and other sanitary appliances.*" Oct. 12, 1859.

Legal Intelligence.

LORD ROMILLY'S CHAMBERS.

THURSDAY, NOV. 1.

(*Before Mr.* MARSHALL, *the Master of the Rolls' Chief Clerk.*)

PATELEY BRIDGE GAS AND WATER WORKS COMPANY, LIMITED.

This matter came before the chief clerk to-day, upon the question of settling the list of contributories.

Mr. Whinney said: Sir, the property of the company has been sold to Mr. Grange, and it has realized £1000, and that sum is now in the Bank of England.

Mr. Janeway: I appear on behalf of Mr. William Brook Metcalfe, of Harrogate, Yorkshire, who is sought to be put upon the list for 30 shares, who admits his liability as to 20, and denies all further claim upon him. There are 279 shares; there are 30 shareholders who have fully paid up, and the question is, whether they cease to be contributories.

The Chief Clerk: It is not my practice to put them on the list if they have paid up.

Mr. Janeway: The question is a very important one, and I believe the Lords Justices, during the last term, held that a man is a contributory, liable to his proportion of the expenses of winding up, although his shares are fully paid; and the result of Mr. Metcalfe's case will determine about thirty others.

The Chief Clerk: As to the 20 shares, are they fully paid up?

Mr. Whinney: There is an amount paid which would make 20 fully paid up, still leaving a debt to Mr. Metcalfe.

Mr. Janeway: They are £5 shares, and my client has paid £100, but not generally upon the shares.

Mr. Whinney: In the ledger Mr. Metcalfe has been charged with a call on 30 shares.

Mr. Janeway: There is no evidence of an application for them, and the documents are inconsistent with acceptance.

Mr. Whinney: I have been informed that the arrangement was that the land on which the works stand belonged to Mr. George Metcalfe and his brother; they agreed to take £100 for it, and it was arranged that that sum should be taken in shares. I am advised that evidence can be brought forward to prove that fact.

Mr. Janeway: No doubt on the 30th of August and 7th of September, 1864, a call was made as for 30 shares, but Mr. Metcalfe continually disputed his liability. He paid no attention to the letters, and on the 29th of December, 1864, an application was made for £80, being £4 per share on only 20 shares, with interest amounting to £2 16s., and that application was accompanied by a statement that, if the calls with interest were not paid, the shares would be forfeited.

The Chief Clerk: I am of opinion that a case has not been made out at present with reference to the 10 shares.

Mr. Whinney: Then, sir, I must ask you to adjourn the case for further evidence, which I am told can be produced.

The Chief Clerk: Very well.

FRIDAY, NOV. 2.

An *ex parte* application was made in this matter to-day, for the taxation and payment of costs.

Mr. Pitman: Sir, during the vacation the official liquidator has received the purchase-money of the property, and I ask that the costs of the petitioner may be taxed and paid, and also the costs of the official liquidator from the date of his appointment to the present time.

The Chief Clerk: Has the list of creditors been settled?

Mr. Pitman: It has not been settled, except as to one. The petitioner's costs will come in priority to anything else.

The Chief Clerk: That may be.

Mr. Pitman: Perhaps you will limit the order to that. I do not press for any other at all.

The Chief Clerk: As the matter is one which is rather under consideration at the present time amongst the chief clerks—namely, the question of making these orders for taxation and payment of costs—I think I will adjourn it to consider what shall be done. No doubt, some universal practice will be established.

Mr. Pitman: Very well.

The Chief Clerk: I will adjourn it for a week.

Mr. Pitman: There may be a doubt as to the official liquidator's costs but as to the petitioner's there could be no objection.

The Chief Clerk: Probably not, but I will adjourn it for a week.

VICE-CHANCELLOR'S COURT.

FRIDAY, NOV. 2.

(*Before Vice-Chancellor* STUART.)

COLONIAL AND GENERAL GAS COMPANY, LIMITED.

Mr. Bacon, Q.C. (Mr. Robinson with him), applied upon a petition for a winding-up order.

Mr. Graham Hastings opposed, but

The Vice-Chancellor made the order.

WEDNESDAY, NOV. 7.

(*Before Mr.* HALL, *Vice-Chancellor Stuart's Chief Clerk.*)

Mr. Howard (solicitor to the official liquidator) said he appeared on a summons taken out on behalf of the official liquidator for leave to arrange the claim of M. Servet, a creditor of the company, by the payment to him of £1500 by three instalments, for the purpose of preventing a forfeiture of the concession and works of the company at Murcia, in the kingdom of Spain.

The Chief Clerk: What was the claim originally?

Mr. Howard: About £800, for money lent and expended on the works by the contractors. The goods were supplied to the works by parties resident in England through the contractor, and money to carry on the works had to be found temporarily by the contractor; and he, not being in funds himself, went to M. Servet, the banker at Murcia, and entered into arrangements with him whereby M. Servet advanced a sum of between £700 and £800, which had been increased by law costs and bribery and corruption of one kind and the other—which unfortunately was too prevalent in Spain—and the claim now amounted to £1500. Another company was in course of formation; they were now negotiating with a person for the sale to him of the works for a sum which should be assessed by some competent valuer.

The Chief Clerk: You wish to pay this money for the purpose of enabling you to sell as a going concern.

Mr. Howard: Hardly as a going concern, but as a concern which has not been stopped. They anticipated by this arrangement that they would save to the company some £2000 at the very least.

Mr. Nash: Have you any evidence of value?

Mr. Howard said they had the letters and books of the company. The company themselves had expended in hard cash something like £10,000 on the works, so that there must be something valuable there; and from time to time the books of the company showed that they had had reports from their surveyors there of a favourable character. They sent out two gentlemen at different times to inspect the progress of the works, and their reports were recorded in the books of the company. At one time, also, one of the directors went out at great inconvenience to himself, so that the company should not be left entirely at the mercy of the contractor and others; and he brought back information which showed that the money asserted to have been spent had been spent, and apparently properly spent, on the works. Altogether the works had cost the company something like £20,000: £10,000 odd represented shares and debentures of the company, which, he regretted to say, having some experience in such matters, generally represented profit of the contractor. The great object now was, to save the works and the concession.

The Chief Clerk: If you do not do that, M. Servet will do what probably he is much better acquainted with than we are—something to get possession of the property, and all you have expended will be lost, as well as the concession.

Mr. Howard: No doubt. He had some affidavits in support of his application, which he would read. They were as follows:—One was by Mr. Mendham, the secretary, who stated that he was appointed in 1864, and had full information respecting the works and concessions at Murcia. That on the 26th of October, 1866, Mr. Snell, one of the provisional liquidators, went to Spain to arrange the claim of M. Servet. According to the agreement there must be 400 lights by Christmas, but he believed some arrangement would be made about it, and he was of opinion that the proposed payment of £1500 to M. Servet would be beneficial to the company. There were affidavits to a like effect by the liquidator and solicitor.

The Chief Clerk: How large a town is Murcia?

Mr. Howard: It is a town of about 80,000 inhabitants, 40,000 within the walls and 40,000 without. They had telegraphed to Mr. Snell, authorizing him to draw at 30, 60, and 90 days, and, supposing M. Servet objected to those terms, then he was authorized to make the best terms he could. When the bills came over for acceptance they would come before Mr. Hall for his authority to accept them or let them be returned for non-acceptance. Arrangements were being made to save the property of the company for the benefit of shareholders and creditors, but it was felt to be much better to be clothed with the very valuable opinion and order of the chief clerk.

The Chief Clerk: It seems to me if you do not enter into this arrangement the whole thing will be gone. The creditor has got you in his power completely.

Mr. Howard: That is so; and you see, sir, the official liquidator states that he believes the arrangement to be beneficial.

The Chief Clerk: Very well; I think I cannot do better than give you authority to enter into the arrangement.

Order accordingly.

FRIDAY, NOV. 9.

(*Before Vice-Chancellor* STUART.)

Mr. Bacon, Q.C., said there were two petitions to wind up the company, which was established to supply certain countries with gas.

The Vice-Chancellor: I made an order last week upon the petition of William Graham.

Mr. Craig, Q.C.: The shareholders have determined that the winding up shall be voluntary, and a provisional liquidator has been appointed.

The Vice-Chancellor: There will be one order on both petitions.

Miscellaneous News.

CHARTERED GASLIGHT AND COKE COMPANY.

The Half-Yearly General Court of Proprietors was held at the Office, Horseferry Road, Westminster, on Friday, Nov. 2—S. A. Beck, Esq., the governor, in the chair.

The Secretary (Mr. J. O. Phillips) read the advertisement convening the meeting, and the minutes of the last general and special courts, which were confirmed.

The following report was then presented, and also the statements of account (for which see next page):—

The annexed accounts embrace the customary period of six months, and are brought down to Midsummer only of the present year; but the circumstances which occurred towards the close of the sitting of Parliament in a session more than ordinarily affecting the interests of metropolitan gas companies, appear to the directors to demand, in their report, the retrospect of a more extended period.

The select committee of the House of Commons appointed "to inquire into the operation and results of the Metropolis Gas Act" commenced its labours on the 24th day of April, and, after for many days receiving evidence in opposition to the gas companies, made a special report to the House, of a nature, in the opinion of the directors, highly unfavourable to the companies, who, in compliance with the expressed wishes of the committee, with the exception of a single witness on points of law, waived their right to call counter-evidence in rebuttal of the general charges brought against them, although prepared to do so to the fullest extent.

The directors have, however, the pleasure to add, that the bill promoted by the corporation of London, was shortly afterwards rejected by the committee, on the evidence even of its own supporters. The committee subsequently made a careful personal survey of the land at Hackney Marsh, where the company proposed to erect new works, in lieu of their existing stations, and being agreed as to the eligibility of the site, and the advantages which the measure would confer on the public, they passed the bill for authorizing its purchase, and also the bill for an amalgamation with the City of London Gas Company. In their subsequent progress through the House of Commons, both bills met with the most determined opposition from the corporation and other parties, which was successfully resisted. In the House of Lords, however, the bill for the new works was rejected on second reading, but by an equality of votes only, and the Amalgamation Bill was afterwards also rejected by a committee of the same House.

In deference to the strong objections still expressed to the erection of gas-works in the vicinity of Victoria Park, the directors, with the greatest reluctance, feel themselves constrained to abandon a site, the advantages of which, in a public point of view, are superior to those afforded by any other locality in the neighbourhood of London.

The cost of the before-mentioned proceedings, and the expenses to which the company has been otherwise put in defending its position against the attacks which have been made upon it, have necessarily been very great; and it is with much regret that the directors look forward to a renewal of this heavy outlay in the next session, as it is believed that the corporation of London will renew their application to Parliament. The directors will, however, not fail to use every exertion to protect and develop the interests of the company.

The litigation with certain of the London fire insurance offices alluded to in the last report, is to a great extent still pending, though the directors are happy to state that, in the action which has already been disposed of, they have, after a severe struggle, been successful, and have obtained a verdict in their favour, with costs. The remaining actions will be defended with equal vigour, and it is trusted with the same result.

In former reports the directors have taken occasion to warn the shareholders that the reduction in the price of gas then contemplated, and since made, would immediately tend to produce a diminution of their profits. The effect of this reduction has now been fully tested, and the directors feel satisfaction in announcing that, while no less than £15,000 has been already, in one half year, saved to the public, the falling off of rental, although undoubtedly at present very serious, is, owing to the more extended use of gas, not so large as was anticipated. In order to estimate this important fact at its full value, it must be borne in mind, that the district lighted by the company, differing from almost all other companies districts, is entirely filled up, and altogether incapable of extension in any direction; and that all the increase of rental which it can obtain is derivable, not from the lighting of new streets, but from the larger consumption of gas in streets already lighted.

The expenses of manufacture have been materially increased, owing to the advance in the price of coals and the rise in the value of labour. These circumstances have therefore operated with those above mentioned to produce a financial result less satisfactory than that attained of late years; but an analysis of the figures of the accounts exhibits a superior and progressive economy of working, which, when considered in connexion with the depreciation in the value of residual products, the heavy and almost universal increase in parochial assessments, and the addition to the company's working capital made by the recent call, gives the directors every encouragement to persevere in a liberal treatment of the public and the assurance of a continuance of prosperity.

All three of the stations being in general good working order, they call for no special comment.

The profit realized during the past half year enables the directors to declare a dividend at the rate of £8 10s. per cent. per annum, free of income-tax, the warrants for which will be transmitted to the shareholders, in the usual manner, on the 5th day of November next.

The directors beg to remind the shareholders that, in the year 1855, the number of the members of their court was reduced to ten, at which, instead of twelve, its authorized number, it has since remained. Meanwhile, the rental of the company has been nearly doubled, and the duties and responsibilities of directors having proportionately increased, they have felt the expediency of filling up the seats at the court which for ten years have been held in abeyance. At a special meeting duly convened for the purpose, Hugh Edward Adair, Esq., and Henry Paull, Esq., were unanimously elected to fill the vacancies.

The Governor: Gentlemen, I have now to state to you the circumstances which have occurred since our last half-yearly meeting. It is with considerable regret that we are only able to offer you a dividend of 8½ per cent. instead of the 11 per cent. which we paid this time last year, but it would be with still greater regret if I could not explain to you in a few words how the difference arises. I think when I do so you will see that you have no cause either to fear for the future prosperity of the company or to find fault with the management of the half year. You will find, in comparing the accounts of the present time with those of the corresponding period of last year, a difference in the following items, which all relate to the question of management. Our retorts have cost us £600 less during the last half year; our "wear and tear," £1100 less; "carrying on the works" has been £900 less; and meters £500 less. These are all with regard to management. For our tar and other products we have received £250 more, but we have very little to do with that; it depends upon the markets. Then, upon the other side, you will find that our coals have cost £800 more; our lamps £450 more; paving £600 more; salaries £200 more; wages £900 more; law expenses £600 more; bad debts £150 more; and for interest on loans we have paid £650; making, with the amount paid to the directors, which came in the half year before Midsummer, a difference of about £6000 against us on these items. The "rates," another matter over which we have no control, have increased £900; and then there is a deficiency in our rental arising from the reduction of 6d. per 1000 cubic feet at Christmas last, amounting to £7400. The deficiency, if the whole 6d. had been taken, would have amounted to £15,000; but, instead of £15,000, I am happy to say our rental has only been reduced £7400. Then, we have received on account of coke £1100 less, and this, again, is a circumstance which depends upon the state of the market; and we have to pay dividend upon an additional capital of £30,000, which, at 8½ per cent., will amount to about £1300. So that here we have items amounting to £17,000 this half year against us, over which we have not had the slightest control, and that is against a saving of £3950; so that, in round numbers, we have about £13,000 against us. But then we have made an extra profit, by the sale of Boghead coal, of £2772, reducing our loss, in round numbers, to about £10,000, which just accounts for the difference between the dividend this time and the corresponding period of last year. I think, if you will go carefully through these items, and examine them, you will find that there is not one over which we have been able to exercise control which does not exhibit a more favourable result. Having said that, I will give you an account of the working, comparing it with that of the corresponding period of last year. At Midsummer, 1865, we consumed 80,000 tons of coal, which cost £71,781, or at the rate of 17s. 11½d. per ton; last half year we consumed only 79,000 tons, which cost £72,596; so that you see the decreased quantity cost us £1000 more, the rate per ton being 18s. 4d., or 4½d. more than in 1865. The decrease in quantity of coal used was 1 per cent., and the increase of price 1 per cent. The gas made in the half year ending at Midsummer, 1865, was 730 million cubic feet, and in 1866 it was 755 million cubic feet, so that we made 25 million cubic feet of gas more from nearly 1000 tons of coal less, which proves that the working of the concern has been very satisfactory. The quantity of gas produced per ton of coal in 1865 was 9123 cubic feet, and in 1866 it was 9538, being an increase of 4½ per cent. Then the rental of light in 1865 was, in round numbers, £139,000; last half year it was only £131,000, arising from the reduction which we were obliged to make in the price of 6d. per 1000 cubic feet, and of which the public have had the advantage. The decrease of rental has amounted to 5½ per cent. The products at Midsummer, 1865, were £27,000; last half year they were only £26,000—a decrease of 3 per cent. The rental per ton of coal in 1865 was 34s. 8¼d.; last half year it was 33s. 2¾d.—a decrease in rental of 4¼ per cent. The net cost of coal per ton, deducting products, was, in 1865, 11s. 2¼d.; last half year it was 11s. 8¼d., being an increase of 6d. per ton. Retorts per ton of coals in 1865 were 10½d.; last half year they cost 9d., so that on this item we are better by 14½ per cent. General wear and tear in 1865 was 1s. 11d.; last half year it was 1s. 7¾d., or 14 per cent. better. Wages per ton of coal in 1865 were 4s. 1½d.; in 1866 they were 4s. 4¼d., so that here we are worse by 6½ per cent. The rental realized per 1000 cubic feet of gas in 1865 was 3s. 9¼d.; last half year it was only 3s. 5¾d., which of course was occasioned by the reduction in the price of gas. The difference amounts to 8¼ per cent. Coke for sale was 53¾ per cent. in 1865, and this time it is 60¼, being an increase of 6½ per cent. So that as far as the working goes, we have every reason to be satisfied; and when we consider that the reduction of 6d. per 1000 cubic feet in the price of gas, if taken upon the total lights, would have been £15,000, and that we have actually lost only £7400, I think we have every right to expect that as time goes on that decrease will be still further diminished, and even, with the increased consumption, entirely got rid of. I think, therefore, we have no reason to complain of our future prospects. There is one thing I should call attention to inrespect to this company, and it is a point which is mentioned in the report—viz., that we have an old district; that there is very little expanding capacity. Our increase must, to a large extent, depend upon old houses taking gas where it has not been taken before; our district not being like that of the Imperial or Western, or some other companies which have a large uncovered area upon which from time to time new houses spring up. There is just one other statement I should like you to hear. The value of coals consumed in the half year ending Midsummer, 1865, was £71,781, which produced a rental of £138,889. For the half year ending Midsummer, 1866, the value of coals consumed was £72,596, which should have brought us a rental of £140,476; it did actually bring us £131,522—the difference, of course, having been occasioned by the reduction in price, amounting to £8954 against us in 1866. Then the value of coals consumed in 1865 produced in rental and products, £165,888; in 1866 it ought to have produced us £167,000, instead of which it only produced £157,670. Then, the total expenditure of £124,662 in 1865 produced a profit of £43,400. At Midsummer, 1866, the total expenditure of £127,171 should have produced a profit of upwards of £44,000, but it did only produce £39,977, which is accounted for by the decrease in rental, the increase in the cost of coal, and the diminution of amount received for residual products. Having made these statements, I have only to add that if any gentleman desires further information I shall be very happy to reply to his inquiries.

Mr. Hedges: It seems to me that the only way we have of getting out of our difficulties is to increase the price of gas again.

The Governor: No; we cannot do that.

Mr. Gray: I think the suggestion of my honourable friend comes very pertinently, but if he would use the influence which he possesses in the City of London to induce them to assent to an increase in price, he would be conferring a favour not only upon this but upon other companies. My worthy friend in the chair, in bringing before you his statement of the affairs of the company, did it in a very lucid manner; and, though he had to speak of a diminution in the rate of dividend—which is always an annoyance to everybody—he was fortunately able to assure us that this does not arise from any want of care in the management of the concern, and I for one am quite satisfied that everything was done on the works which we could reasonably expect. There are circumstances in connexion with all companies over which we can have no control. You are all aware of the great agitation which has been going on in London against the gas companies, and which may continue for some time to come. It is a very senseless agitation, but while it continues it is very prejudicial to our interests. There is not the slightest foundation for it, but we cannot help it. We can only hope that it will soon subside; but if the corporation of the City of London should be so ill advised as to attempt next session to get an Act of Parliament to enable them to compete with the gas companies, we shall offer to their scheme the most strenuous opposition. In the course of this agitation reference has been made to Manchester, and to the great advantage which is there enjoyed through the corporation having the gas supply under their own control. But although the outlay there has been very considerable, the net profit derived was only about £20,000. Their rental is £168,000; the cost of coal to them is only 17s. per ton, whereas if we were to use the same kind of coals in the City of London we should have to pay 24s. or 26s. for them. I need not tell the proprietors that in proportion as the demand for cannel coal increases, in the same proportion will the price rise. Mr. Romans, who was examined before the select committee of the House of Commons last session on the metropolis gas inquiry, stated that in Edinburgh he supplied cannel coal at 22s., and he believed the gas there produced was the best in the United Kingdom. He stated further that they used about 15,000 tons of the Lothian cannel coal, and the rest was of a cheaper description obtained from the pits of Lord Elphinstone and the Duke of Buccleuch, for which they paid about half the money. He said

Dr. **Profit and Loss Account, from to December 25, 1865, June 24, 1866.** *Cr.*

To Coals consumed in the half year, including labour				£72,596	7	4	
Stores, &c., used in the half year, viz.:—							
Retorts and setting, including labour				2,971	18	0	
Lamps and lamp lighting, ditto				2,654	7	11	
General wear and tear, and mains	£7,377	17	9				
Less received for old and burnt stores	852	9	10				
				6,525	7	11	
Carrying on the works				2,232	16	10	
Meters and fixing, including labour				2,531	13	8	
Paving				1,320	10	3	
Testimonial to directors from court of proprietors				1,575	0	0	
Directors and auditors				1,276	16	0	
Salaries and commissions				6,577	4	2	
Wages and contingencies, viz.:—							
Wages	£16,097	10	0				
Contingencies	1,203	5	4				
				17,300	15	4	
Rent and taxes, viz.:—							
Rent	£ 998	7	4				
Taxes	4,119	17	8				
				5,118	5	0	
Income-tax				913	14	4	
Law expenses				1,388	14	5	
Annuities to superannuated officers and workmen				587	6	4	
Sick and benevolent fund				135	11	9	
Debts due, being bad, written off	£ 820	7	0				
Received on bad debts	68	6	0				
				760	1	0	
Depreciation of gasholder and coal-store on leasehold property				60	0	0	
Interest paid on loan from bankers				644	13	9	
				£127,171	4	0	
Balance				33,977	9	8	
				£161,148	13	8	

By Rental of light for the half year							£131,522 16 3
Coke and breeze, deducting labour, viz.:—							
Coke				£20,086	14	2	
Breeze				1,358	6	9	
							21,445 0 11
Tar and other products, deducting labour							4,703 17 5
Poplar station rent account, balance							12 5 10
Rents received							386 3 10
Interest received on deposits at bankers							82 6 6
Excess of parish rating refunded on appeal							223 11 6
Profit realized by sale of Bathville coal							2,772 11 5
							£161,148 13 8

Dr. **Balance-Sheet, June 24, 1866.** *Cr.*

To 1st, 2nd, and 3rd capitals				£600,000	0	0	
Fourth capital at Christmas, 1865	£180,000	0	0				
Amount received this half year on account of further call upon fourth-capital	30,000	0	0				
				210,000	0	0	
							£810,000 0 0
Expended, viz.:—							
Westminster station—							
Balance at Christmas	£480,768	7	5				
Expended this half year, viz.:—							
For new property	£ 68	15	7				
Ditto works	4,495	6	5				
Ditto mains	279	14	10				
Proportion of parliamentary expenses in respect of application for new works at Hackney	811	3	5				
				5,655	0	3	
				£486,423	7	8	
Brick Lane station—							
Balance at Christmas	£180,966	5	10				
Expended this half year, viz.:—							
For new works	£ 652	5	9				
Ditto mains	274	19	1				
Proportion of parliamentary expenses in respect of application for new works at Hackney	305	6	8				
				1,232	11	6	
				182,198	17	4	
Curtain Road station—							
Balance at Christmas	£89,532	16	5				
Expended this half year, viz.:—							
For new property	£ 198	14	10				
Ditto works	514	18	0				
Ditto mains	29	10	1				
Proportion of parliamentary expenses in respect of application for new works at Hackney	151	1	3				
				894	4	2	
				90,427	0	7	
							759,049 5 7
							£50,950 14 5
Dividends remaining unpaid							5,860 7 5
Debts due by the company for coals, and to sundry tradesmen and others							7,979 3 8
Amount due to collectors for commission, viz.:—							
Westminster station				£ 693	18	0	
Brick Lane ditto				287	10	8	
Curtain Road ditto				154	13	8	
							1,136 2 4
Amount due for wages and contingencies, viz.:—							
Westminster station				£ 594	2	11	
Brick Lane ditto				313	7	8	
Curtain Road ditto				160	13	3	
							1,068 3 10
Amount due at chief office for contingencies							162 15 10
Balance of profit and loss, viz.:—							
Balance to Dec. 25, 1865	£47,719	5	6				
Less half year's dividend on £780,000 and bonus	47,250	0	0				
				£ 469	5	6	
Profit of the half year to Midsummer, 1866				33,977	9	8	
							34,446 15 2
Depreciation-fund, for gasholder and coal-store on leasehold property, at Christmas, 1865				£ 794	4	3	
Add proportion for this half year				60	0	0	
Ditto dividend received on amount invested				11	18	4	
							866 2 7
Contingent-fund at Christmas, 1865				£10,118	0	7	
Add dividend received on amount invested				302	4	9	
				£10,420	5	4	
Deduct proportion of parliamentary expenses relating to the metropolis gas inquiry and opposition to the Corporation Gas Bill				2,046	12	10	
							17,373 12 6
G. C. Glyn, Esq., treasurer							10,000 0 0
							£129,783 17 9

By Amount due to the company, viz.:—							
For rent of light at the several stations, viz.:—							
Westminster station				£36,471	17	1	
Brick Lane ditto				12,883	5	3	
Curtain Road ditto				7,193	9	2	
							£56,548 11 6
For coke and breeze sold at the stations, viz.:—							
Westminster station				£2,746	16	7	
Brick Lane ditto				1,416	6	4	
Curtain Road ditto				304	2	3	
							4,467 5 2
For tar and other products sold at the stations							11 2 9
Balances of sundry accounts due to the company							7,021 7 3
Treasurer's accounts, viz.:—							
Balance of general account				£8,399	3	1	
Ditto of dividend ditto				320	1	6	
							8,719 4 7
Cash advanced to pay wages at the stations							1,205 0 0
Stores on hand, viz.:—							
Westminster station				£2,341	14	2	
Brick Lane ditto				2,901	16	11	
							5,243 11 1
Coals on hand, viz.:—							
Westminster station				£13,011	1	10	
Brick Lane				6,906	3	2	
Curtain Road ditto				2,736	9	3	
On shipboard				2,065	7	1	
							24,719 1 4
Coke and breeze on hand, viz.:—							
Westminster station				£ 37	15	0	
Brick Lane ditto				72	10	7	
Curtain Road ditto				225	2	5	
							335 8 0
Tar and other products on hand							395 13 5
Ship *Dispatch*							766 17 10
Amount invested in the purchase of £21,737 0s. 6d. Reduced Three per Cent. Annuities							20,350 14 10
							£129,783 17 9

also that the cannel coal would yield 12,500 cubic feet of gas per ton, and that the price of gas in Edinburgh was 4s. 6d. per 1000 cubic feet. And yet, with all the advantages which the agitators for low prices in this city contend for, I see, by a statement in the JOURNAL OF GAS LIGHTING this week, that the Edinburgh Gas Company have been compelled to give notice of their intention to raise the price of gas from 4s. 6d. to 4s. 10d. after the current quarter. Therefore it is very unreasonable for the public to expect that we can make any further reduction whatever at present. But if the corporation would only be patient, and not listen to agitators who have nothing to lose but everything to gain by agitation, the time is probably not far distant when such a reduction may become possible. It must, however, depend largely upon the price of coal, which is the great element in every operation of a gas company. The price of gas at Manchester in 1863 was 4s.; in 1864, 3s. 9d.; in 1865, 3s. 6d.; and it is now 3s. 2d.; but there the corporation are permitted to manufacture their own products, and the rates they have to pay are far less than fall upon us. The cost of labour is also less—and, in fact, everything is in their favour. And yet we are told in London that 2s. 6d. per 1000 feet for our gas would give us a full 10 per cent. dividend. I will trespass no further on your time, gentlemen, than to express my cordial satisfaction with the condition of this company's affairs, and with the continued attention bestowed by every one in connexion with this establishment to the carrying on of its operations. My worthy friend the governor has pointed out the reason why we cannot get 10 per cent. on this occasion. Of course, we all regret the circumstance, but I think that if the public will only allow us to carry on our own business in our own way, we shall, in all probability, with the same good management we have hitherto enjoyed, while giving them reduction in price, have the satisfaction of again receiving our 10 per cent. dividend. There is one thing my worthy friend did not allude to. Under the Act of Parliament the companies have power to charge a rental of 10 per cent. upon the meters supplied by them to the consumers. Those companies which supply the City have hitherto not availed themselves of their right to do so, although it would make a considerable difference to them—something like £6000 a year in the City. All this the public have had without any consideration, and yet they are not content. It only shows to us that no amount of concession on our part will disarm the opposition of some people, or subdue that feeling of hostility they are always ready to exhibit towards us so long as any encouragement is given to it. I have much pleasure in seconding the motion for the adoption of the report.

The resolution was put, and carried unanimously.

The GOVERNOR brought up a report from the court of directors to the following effect:—"Resolved that a dividend at the rate of £8 10s. per cent. per annum for the half year ending on the 30th of June last be now declared, and reported to the general court of proprietors, to be holden on Friday, the 2nd of November;" whereupon

Mr. HEDGES moved, and Mr. GRAY seconded, the following resolution, which was unanimously agreed to:—"That the dividend declared by the court of directors be approved and adopted, and be paid by warrants on the treasurer to be transmitted to the shareholders per post on the 5th day of November inst."

The GOVERNOR: The next resolution I have to report, and to which I shall ask your assent, is for the increase of the salary of our most excellent secretary. We have had now nearly four years experience of his services, and his skill and energy are so great for the company—his whole heart, in fact, is devoted to its interest—that we have had no hesitation in recommending this increase of salary. During the last session of Parliament I do not know what we should have done without him. His knowledge of parliamentary business, I have no doubt, saved us a great deal of money, and the ability which he has displayed in the performance of his duties is beyond all praise. For these reasons and for his general zeal for the promotion of the well-being of the company we have thought it desirable to come to the resolution I have now to report—namely, that the salary of the secretary be raised to £1200 per annum from Midsummer last.

Mr. GRAY: I have very great pleasure in rising to express my cordial concurrence in the recommendation of the directors. I have had the opportunity for a long time past to see the zeal with which my good friend the secretary has discharged the duties of his office, and more especially during the period of the agitation to which we have been exposed; and I may say, without the slightest fear of any one differing from me, that no company in London has a more efficient secretary than we have. Whatever the state of our dividends, we must all feel that we ought to do justice to those who are placed, as he is, in situations of great responsibility. Without, therefore, trespassing further upon your time, I content myself with moving—"That this general court of proprietors do agree with and confirm the report of the court of directors."

Sir ANDREW WAUGH: I have great pleasure in seconding the motion.

The resolution was put, and carried unanimously.

The SECRETARY returned thanks to the governor for the very complimentary terms in which he had taken notice of his services, and to the shareholders for the very kind manner in which they received the proposition of the directors.

The retiring auditors were then re-elected, and Mr. BARKER returned thanks for himself and colleagues.

Mr. GRAY: Before we separate, we owe a vote of thanks to our directors, and I have great pleasure in moving it.

Mr. HEDGES seconded the motion, which was carried unanimously.

The GOVERNOR: Gentlemen, on behalf of myself and brother directors, I beg to return you our best thanks for the honour you have done us, and for the kindness you have shown. I assure you it will be a stimulant to increased exertions on our part. I by no means doubt of our prosperity returning, and that we shall again be in a position to pay you 10 per cent.

EQUITABLE GASLIGHT COMPANY.

The Half-Yearly Ordinary General Meeting of the Shareholders of this Company was held at the Offices, John Street, Adelphi, on Tuesday, Nov. 6—C. H. A. MARTELLI, Esq., in the chair.

Mr. ANDREWS (the secretary) read the advertisement convening the present meeting, and the minutes of the meeting held in May last, also the following report of the directors:—

The directors have the pleasure of submitting to the shareholders the usual statement of accounts, showing the result of the operations of the company during the half year ended the 30th of June last.

The manufacturing plant is in an efficient condition, and capable of satisfactorily supplying the present demand for the company's gas.

The great advance that has taken place in the price of coal and cannel, and the rise in the wages of the workmen, materially increase the cost of gas, and this increase of cost, combined with the reduction in value of coke, breeze, and other products, is likely to operate unfavourably on the future profits of the concern.

The net profits realized during the half year amount to £17,953 19s. 6d., from which the directors recommend a dividend of 5 per cent., as authorized by the Act, less the income-tax.

Dr. *Manufactory and Revenue Account, for the Half Year ended June 30, 1866.* *Cr.*

To Tradesmen's accounts, purification, &c.	£ 444	17	3	By Gas-rates, to June 30, 1866	£38,008	0	2
Coals, carbonized	17,007	3	7	Meter-rental	786	17	4
Wages (manufacture only)	4,420	11	1	Coke, net sales and stock	6,130	13	10
Rent, rates, and taxes	1,011	8	10	Breeze, ditto	537	15	11
Directors fees	650	0	0	Tar, ditto	1,397	12	1
Auditors ditto	45	0	0	Ammoniacal liquor	535	6	0
Salaries	1,610	17	2	Balance of interest account, &c.	240	12	8
Collectors commission	601	5	4				
Stationery and stamps	117	1	3				
General charges	546	18	11				
Bad debts and allowances	75	5	7				
Wear and tear	2,866	3	6				
General law charges	13	16	6				
Income and property tax	22	9	6				
Parliamentary expenses	250	0	0				
Net profit, to June 30, 1866	17,953	19	6				
	£47,636	18	0		£47,636	18	0

Dr. *Balance-Sheet.* *Cr.*

To Capital, joint stock—				By Investment, to Dec. 31, 1865	£269,827	16	3
Old shares, £50	£200,000	0	0	Less mains, &c., taken up.	363	11	6
New ditto, £25	100,000	0	0		£269,464	4	9
Dividends	65	19	7	Charged this half year	2,704	10	6
Tradesmen's accounts, &c.	3,974	13	8			£272,168	15	3
Taxes, rates, &c.	521	5	4	Meters	6,918	16	2
Collectors commission	296	10	2	London and Westminster Bank	14,103	12	6
Auditors	45	0	0	Cash balance	3,768	11	10
Profit and loss	21,691	1	7	Gas-rates	14,329	5	10
				Tradesmen's accounts for coke, &c.	3,210	16	3
				Coals—stock	1,413	17	1
				Coke—ditto	37	10	0
				Breeze—ditto	4	10	0
				Ammoniacal liquor—ditto	15	15	0
				Service-pipes—ditto	279	14	9
				Main-pipes, &c.—ditto	833	6	5
				General stores—ditto	2,448	5	8
				Leasehold property	7,000	0	0
				Income and property tax	61	13	7
	£326,594	10	4		£326,594	10	4

Unappropriated profits to Dec. 31, 1865	£3,737	2	1
Net profit to June 30, 1866	17,953	19	6
Amount available for dividend	£21,691	1	7

The CHAIRMAN: In moving, as I now beg to do, the adoption of the report, I will make but few remarks. You all know that this is rather a critical time for gas companies, and that prudence dictates a little reserve, lest the prejudice which exists out of doors should lead to a misuse of anything said which might tell against us, while that which is favourable might be passed over unnoticed. Although, therefore, I shall be only too happy to answer any questions which may be put to me, the existence of this prejudice will be my sufficient reason for a little reserve, even among the shareholders. We are, as it were, besieged, and must be very watchful and careful, not only as to what we do, but also as to what we say. Indeed, on the present occasion, I do not know that there is much which calls for observation. It is stated in the report—and the remark might, perhaps, frighten some persons—that "the great advance that has taken place in the price of coal and cannel, and the rise in the wages of the workmen, materially increase the cost of gas." Now, I believe these facts are notorious, and it is necessary that the truth should be kept before our minds; at the same time we have no real cause for alarm. At the present moment the company is doing well, but it is impossible, from day to day, to say what may occur. We know certain facts which must be adverse, amongst these the increase in the cost of coal and the depreciation of the value of the coke, breeze, and other products. It is but the commencement of this state of things, and where it may end we cannot tell, but, as we state in

the report, the result "is likely to operate unfavourably on the future profits of the concern." We do not mean to say that it is likely to reduce your dividend below the amount we have been paying, but that these facts will have an influence upon the future prospects of the concern is unquestionable. Upon looking at the accounts now laid before you, it will be seen clearly that during the past half year the profits realized by our operations are very satisfactory; but, in the state of things now prevailing with reference to the public, we know that we may at any moment be attacked again—in fact, we do rather apprehend that next session may produce some hostile movement against us, and, therefore, we cannot tell what may be our position when we meet you again. That is the reason why we have not alluded more particularly to the question of the reduction in the price of gas. We have always been very forward to make reductions, and have given the public the advantage of such reductions, at a time when we were under no legal, and it can hardly be said under any moral, obligations to do so. I am happy to say that, so far as any effect which that reduction made upon our revenue is concerned, we are gradually recovering from it, as you will see when I tell you that whereas our rental for the quarter ending at Miachaelmas, 1865, when we last reduced the price of gas, was £12,073, the corresponding quarter of 1866 gave us a rental of £13,100; so that we have increased this year £1027. This shows, I think, that we may count upon a continued progress in that direction, and proves that the directors took a wise step when they announced their intention to reduce the price of gas to the public. We shall hope to do so again hereafter, if we are allowed to remain quiet without being subject to those enormous expenses to which we have been exposed. We are, however, threatened with all sorts of parliamentary interference, and we cannot tell what may be the result.

A PROPRIETOR: What is the diminution in our income this half year, as compared with last year?

The CHAIRMAN: It is between £5000 and £6000 on the half year.

A PROPRIETOR: Do you intend to apply to Parliament again?

The CHAIRMAN: Not at present. We think it is not a favourable time to do so. By the late alterations at the works we find that we can, for some time to come, supply all the demand likely to be made upon us, and therefore we consider that it will be better for the present not to seek further parliamentary powers. You are all aware of the result of the inquiry, during the last session, into the metropolis gas supply. As far as it went, the select committee of the House of Commons reported unfavourably to the companies. There was no special complaint made before that committee against the Equitable Company, and, indeed, the complaints against the companies generally were of the most vague and uncertain character. We were quite prepared to meet them, having abundance of evidence to give on all the material points, but we were misled (of course by some misapprehension, and not wilfully or designedly) by the remarks of the chairman of the committee, which conveyed to our minds the impression that they were perfectly satisfied, and did not require any refutation of the charges against us. It certainly appeared most extraordinary to us that one of the resolutions most damnatory of the companies was really carried in that committee by the casting vote of the chairman after the observations he had made which led the companies to suppose it was not necessary for us to call evidence to rebut the statements of our opponents. It is difficult to account for it, except on the assumption that there was some mistake. We are all liable to that, and we must hope that when the existing prejudice against the gas companies has a little passed over we may have justice meted out to us by the public and the Legislature. I do not know that there is anything more that I need say. We are going on satisfactorily, and I hope we shall continue to do so, but it is impossible to say what may be in the future. We shall act with the utmost caution, and shall do our best to increase the prosperity of the concern. It will depend upon what is done next session in Parliament whether we shall be in a position to give the public the advantage of a further reduction in price. The motion now is—"That the report of the board of directors, together with the accounts as examined and certified by the auditors, be received and entered on the minutes."

Mr. RHODES seconded the motion.

Mr. HADLAND: The sum of £250 in the accounts under the head "Parliamentary expenses," is, I presume, the amount actually paid to Midsummer?

The CHAIRMAN: Yes; the amount actually paid.

Mr. LIDDLE: I should like to ask the question whether this £250 is the expense you were put to in endeavouring to get your own bill?

The CHAIRMAN: Yes.

Mr. LIDDLE: I do not see any item here for parliamentary expenses incurred by this company in common with others in opposing the Corporation Bill. I suppose that would amount to £700 or £800.

The CHAIRMAN: The accounts are not finally passed. You are aware that the parliamentary inquiry was hardly determined before the end of May, so that we could not very well have got them into the present statement. In fact, we have not yet got them passed, but sums of money have been paid on account of those expenses.

Mr. LIDDLE: I am glad to find that you do not intend to apply to Parliament again next year. At present, gas companies are looked upon with a feeling of dislike which I trust, when we have shown that we are really doing our duty to the public in a satisfactory manner, will pass away. I exceedingly regret the course taken by the committee of the House of Commons, by which the companies were misled as to the necessity of calling witnesses upon the late inquiry. Unquestionably evidence ought to have been produced to rebut the evidence given by the promoters of the Corporation Gas Bill; and I am quite sure, if the other side had been heard as it should have been, the committee would have been induced to present a very different report to the House to that which they did present. It is a pity, I say, that you were so misled, and that you did not insist upon your counsel taking the desirable course of rebutting by evidence the charges brought against you. There is another point to which I just wish to draw attention, because all these things are criticized by the public, and, if they can lay hold of anything which appears to justify them in charging gas companies with extravagance, they are only too glad to make a handle of it. In the accounts for this half year I find an item to which I have always objected—"General charges"—and the amount put down under it is £546 18s. 11d. This seems to me a large sum for one half year. For the corresponding period of last year the amount was £204 6s. 8d. I have such confidence in the gentlemen on the other side of the table, that I am sure they would not expend money without it was necessary for the interests of the company, but I think we ought to have the particulars of which this item is composed.

The CHAIRMAN: Of course we can go into all these details if the proprietors desire it, but I do not think it would be a convenient course on occasions like the present.

Mr. LIDDLE: I think perhaps it is not; and therefore I will only draw attention to the fact that it is a large sum.

The CHAIRMAN: We are quite alive to the fact and to the importance of observing economy in the administration of the affairs of the company.

The motion was then put, and carried unanimously.

The CHAIRMAN: As a happy consequence of the adoption of the report, I have now to submit another resolution, which is—"That a dividend be now declared out of the profits of the concern, for the half year ending the 30th of June last, of £2 10s. per share on the old shares and £1 5s. per share on the new shares, and that the said dividends be payable, less the income-tax, after the termination of this meeting, and on the 7th, 8th, and 9th inst., and afterwards on every Tuesday and Friday, between the hours of ten and four o'clock."

Mr. RHODES seconded the motion, which was unanimously adopted.

Mr. HADLAND: I have a resolution to move, which I have no doubt will meet with an equally unanimous reception. It is—"That the thanks of the meeting be given to the chairman and board of directors, for their successful management of the affairs of the company." Having been connected with this company now for a great many years, I have had opportunities of witnessing the care and attention bestowed upon it by the directors, and I am sure that in a meeting like the present there will not be two opinions as to the propriety of passing this resolution.

Mr. RHODES seconded the motion, which was carried unanimously.

The CHAIRMAN: Gentlemen, I thank you most cordially on my own account, and on behalf of my brother directors, for the kind way in which you have received the mention of our services. I assure you it will be our object and desire, individually and collectively, to do all in our power for the advantage of the company. It has ever been so in the past, and we shall spare no pains in the future to endeavour to preserve your prosperity.

On the motion of Mr. HADLAND, a vote of thanks was given to the auditors.

Mr. HADLAND then moved, and Mr. RHODES seconded, a vote of thanks to the secretary, the engineer, and the other officers of the company, which was carried unanimously.

The SECRETARY: Gentlemen, I thank you very sincerely, on the part of myself and brother officers, for the very kind vote just passed. We shall continue, as we have always hitherto done, to exert ourselves to the utmost to promote, as far as in our power, the prosperity of the company.

STRIKE AT THE CORPORATION GAS-WORKS, MANCHESTER.

On Wednesday morning last, the stokers and labourers in the service of the Gas Committee of the Manchester Corporation, at the works in Gaythorn and Rochdale Road, turned out on strike, and refused to "put in their charges" for the continuation of the manufacture of gas. The cause of grievance on the part of the men arises out of a question of wages. The men are at present paid 4s. 6d. per day for seven days in the week. They demand an increase to 5s. per day, and sent in an application to that effect a short time since. They were informed in reply that the municipal elections were pending; that, on the 9th of November, a reconstruction of the committee would take place; and that, by the new committee, the claim would be fully considered. This reason for deferring the subject seemed to give satisfaction; but suddenly on Wednesday the Rochdale Road men refused to resume their work, and proceeded in a body to the Gathorn dépôt, and succeeded in inducing the men at that establishment to follow their example. The committee, by this sudden proceeding on the part of the men, were placed in a position of considerable difficulty; and, under an apprehension that the supply of gas to the city would fall short, they issued notices to the large consumers urging them to be as sparing as possible in the use of the gas. At the same time they set themselves resolutely to work to obtain men from other departments of the corporation's service, to supply the place of those who so peremptorily and unwarrantably had thrown up their employment. On Wednesday afternoon a portion of the committee met a deputation of the workmen, and conferred with them on the subject of their demand. The men were informed that, in leaving the employment of the gas committee without giving the stipulated notice of a week, they had rendered themselves liable to be imprisoned, besides placing themselves in a position which would deprive them of the sympathy of the public, as the evident intention was to bring the committee under great disadvantages at the dark season of the year, when gas is most needed. The reply of the men was that they were determined not to give way or resume work until their demands were complied with. The committee stated that they had no power to make the concession thus suddenly and defiantly demanded. Up to Wednesday the committee had succeeded in drafting 70 or 80 men from other departments, while active measures were being devised to procure able-bodied labourers, and it was hoped that by these means the obstruction to trade and the danger arising from having a great city in darkness would be obviated. The number of men who have turned out is about 260.

On Thursday morning Alderman Neill, one of the members of the committee, received at the Gas Offices, York Chambers, a deputation from the stokers and labourers now out on strike. Mr. Neill plainly told them that their demands would not be complied with, and that they had better return to work before Saturday, otherwise their places would be filled. In the course of the day some of the men, acting on the judicious advice given them, applied at the works, and were taken on again at the previous rate of wages. The committee have thus renewed hopes that the difficulty they have to contend with will not last long.

The stock of gas on Thursday morning being low, it was thought desirable that it and what could be made in the meantime should be kept for the lighting of the public lamps and other purposes that night. The streets were, however, only partially, and somewhat imperfectly, lighted, and private firms were obliged to protect themselves by laying in stocks of lamps and candles. At a concert at the Free Trade Hall paraffin lamps were introduced, in addition to the gas, and at the theatres also additional illuminating powers were called into requisition.

REDUCTION IN THE PRICE OF GAS AT WARRINGTON.—The directors of the Warrington Gaslight and Coke Company have given notice that the following will be the price of gas from the 1st of July last:—

Half-Yearly Consumption.		Price per 1000 Cubic Feet.	Discount, if Paid within One Month from Delivery of Account.	Net Price per 1000 Cubic Feet.
Within the borough	Under 100,000 cubic feet.	4s. 0d.	0s. 6d.	3s. 6d.
	100,000, and under 800,000	4 0	0 7	3 5
	800,000 and upwards.	4 0	0 8	3 4
Outside the borough, and not exceeding one mile from the boundary		4 6	0 6	4 0
Outside the borough, and exceeding one mile from the boundary		5 0	0 6	4 6

SINGAPORE GAS COMPANY, LIMITED.

An Extraordinary General Meeting of this Company was held at the London Tavern, Bishopsgate Street, on Tuesday, October 30—H. P. STEPHENSON, Esq., in the chair.

Mr. R. KING (the secretary) read the advertisement convening the meeting, and the following report and statements of account were presented:—

The directors have the satisfaction of reporting continued progress in the lighting of Singapore, for particulars of which they refer to the report annexed from their engineer and manager, Mr. E. J. Wells, dated August 1, 1866.

The balance-sheet to 30th June, 1866, and appended to this report, shows the financial position of the company. The profits for the half year are £802 13s. 7d., which, together with £173 12s. 6d., the unappropriated profit of the preceding year, makes the available balance £976 6s. 1d. Out of this sum the directors recommend the declaration of a dividend, at the rate of 7½ per cent. per annum, less income-tax, on the preference capital, and a dividend at the rate of 3½ per cent. per annum on the original capital, free from income-tax; the balance of £25 8s. 8d. to be carried forward to the profit of the succeeding half year.

Upon working out the coal stock in June, a deficiency of coal was discovered, the value of which has been charged in the present accounts, otherwise the directors would have been prepared to recommend a larger dividend.

Report of Engineer and Manager.

Gentlemen,—I have the honour to lay before you my report for the half year's working ending June 30th 1866. This is not so satisfactory as I could have wished. Singapore has been passing through a commercial crisis, which has materially affected the working of the concern. There has been a considerable falling off in the consumption of gas for the past three months; the depression of trade and the scarcity of money has caused the consumers to curtail their expenditure as much as possible.

During the past month there has been an improvement, and I have no doubt but that the returns for the present half year will show a considerable increase over the one that has just closed.

If we compare the private rental of the half years ending, 30th June 1865, and the 30th of June, 1866, we find it 4366.45 dols. against 8005.84, dols., thus showing an increase of 3639.39 dols. as against the corresponding half year. It is more apparent if the total gas-rental for the year ending 31st December, 1865, is taken. This amounted to 17868.84, dols., and the return for the half year ending 30th June, 1866, is 13523.10, dols., which, at the present rate, will give us a rental for this year of 27046.20 dols. upon the general lighting. The order came to hand early in July for the Fort to be proceeded with immediately. The fitters are fully engaged in laying the mains and fixing the interior fittings. I am in hopes the whole of the work will be completed and the Fort fully lighted during the present month.* There are several orders on hand, which will be proceeded with as soon as the Fort is completed. The residents of Tanglin and Princeps Hill are anxiously looking forward for the arrival of the mains, to enable them to light their residences in those districts. I am in hopes, before the present half year is closed, to have some of them lighted.

Gas is still being used by the Chinese for illuminations and wyongs.

An arrangement has been made with the municipal commissioners, so that the payments for the public lamps fall due at stated periods: say, on the 30th of June, and the 31st of December. The collection of the gas-rental, &c., has been satisfactory The fitting account has realized fair profits, and all fittings on hand are of a saleable nature. The products have also met with a ready sale at good prices. Upon the soundness of the mains and services, I beg to refer you to my monthly reports.

The company's property is now all enclosed by boundary walls. The wall on the river frontage, and the entrance gates at Eochore Bridge are completed, and I do not anticipate any further outlay for some time to come in buildings.

The whole of the works are in a good state of repair. By frequent tarring, all ironwork is preserved; the gasholder does not show the least signs of decay. the brick retorts are working very satisfactorily; one bench of seven retorts has been in work nearly twelve months without any repairs; all that will be required when let down will be to renew the fire-place. My opinion is they will last for four years. The work for retorts is more trying in the East than in England, as we have no seasons. It is with great pleasure I have to inform you the works are all that can be desired for produce and supply.

Before leaving this part of my report, I think it necessary to make a few remarks on one of the most important points in connexion with the manufacture of gas. What is the best description of coal to be used in the East? I have not the least doubt that the Australian coal will answer our purpose best, provided we can get the right sort. The *Rangoon's* cargo, although a first-class coal in appearance, does not come out well in the working. Three other cargoes arrived from Australia; from each ship I took out about three tons, and tested them in the actual working. The results were 7400, 8000 and 9000 cubic feet per ton; it was deemed advisable by the local committee to purchase the last-named cargo of 886 tons, at 8.00 dols. per ton, free on board the company's tonkongs. This will enable me to show good results in the present half year's working, as they produce gas of an illuminating power of 14 candles, thus enabling me to dispense with the use of cannel coal; they are also very free from sulphur, and produce coke of good quality.

I have thought of using Labuan and Australian, but there is no dependence to be placed in the supplies from Labuan, and even if there were, it is too high in price.

We have a larger stock in hand than, under ordinary circumstances, I would recommend. They are all stored in good condition, and there is no dust with them. I do not anticipate any injury to them from deterioration.

It gives me great pleasure to be able to report the Europeans in the employment of the company are most anxious to further the interests of the undertaking, and they are attentive to their several duties. The native workmen are answering my expectations.

I now beg to lay before you the statements for the working of the half year.

The increase in lighting and total number to the 30th June, 1866, as under—

	Number lighted, Dec. 31, 1865.	Increase during Half Year ending June 30, 1866.	Total Number lighted June 30, 1866.
Public lamps	339	Nil	339
Houses lighted	341	120	461
Private lights	2694	888	3582
„ lamps	23	7	30
Cooking stoves	15	5	20

In drawing the present report to a close, I would beg to state that although at the present time there is a temporary derangement, consequent upon the commercial crisis, my opinion remains unaltered, that the concern will be remunerative to the shareholders.—I have, &c., E. J. WELLS, Manager.

* Fort Canning has since been lighted up (Sept. 1).

Dr. *Balance-Sheet, June 30, 1866.* *Cr.*

To Capital—				By Cash at bankers	£1,162	7 3
£5 paid on 2000 preference shares	£10,000	0 0		Ditto in hands of secretary	6	14 7
£5 „ 6331 ordinary ditto	32,655	0 0		Bills receivable	1,000	0 0
£3 „ 10 „ „	30	0 0				£2,169 1 10
£1 „ 418 „ „	418	0 0		Office furniture		166 1 11
		£43,103 0 0		Works and apparatus	£24,244 14 5	
8959 shares.				Freight, insurance, and charges	4,069 15 9	
						28,314 10 2
Debenture bonds		3,800 0 0		Purchase of land		886 7 8
Sundry creditors		2,510 2 11		Retort account		407 15 0
Profit and loss		976 6 1		Stock on hand		5,971 18 6
				Salaries, passage-money of engineer and workmen to Singapore, travelling expenses and wages in England.		5,118 11 6
				Preliminary expenses and law charges		828 12 8
				Advertising and broker's commission		263 3 0
				Rent of offices, land, stationery, general charges; auditors, directors, and local committee fees; rates and taxes		1,480 9 5
				Loss on exchange		961 5 2
				Interest on capital and loans		2,067 14 2
				Gas-meter rental, fittings, and sundries under collection.		1,737 18 0
				Sundry debtors		16 0 0
		£50,389 9 0				£50,389 9 0

Dr. *Profit and Loss Account, from January 1 to June 30, 1866.* *Cr.*

To Coal carbonized			£1,260 18 9	By Balance at profit and loss, Dec. 31, 1865.	£1,737	11 1	
Lime and oxide			11 4 0	Amount short paid as dividend, Dec. 31, 1864.	1	11 0	
Trade and general charges			229 14 5			£1,759 2 1	
Rent, rates, and taxes			94 4 6	Less amount declared as dividend		1,585 9 7	
Directors and auditors fees			285 10 0				173 12 6
Salaries and collector's commission			384 2 6	Gas and meter rent			3,104 14 2
Wages			553 5 11	Products, profit on fittings, and sundries			687 19 1
Interest on loans and debentures			145 14 3				
Bad debts and allowances			14 1 4				
Retort account			11 4 0				
Balance—profit for appropriation			976 6 1				
			£3,966 5 9				£3,966 5 9

The CHAIRMAN: Gentlemen, in moving that the report, with the balance-sheet attached thereto, be received, adopted, and entered on the minutes, I have, in the first place, to explain to you that this meeting is called as an extraordinary meeting because, under our Articles of Association, we have only one ordinary meeting in the year; but, under the pledge which the directors gave to the shareholders on a former occasion, they intend for the future to hold their meetings half yearly, and therefore, as all other meetings, except the ordinary meeting in April, are extraordinary meetings, this meeting is called as extraordinary for the purpose of receiving the directors report and to declare a dividend. There are two or three points upon which I should like to say a word in reference to the accounts. If you will examine the balance-sheet, you will find that, as regards the capital account, the amount paid upon our share capital has, within the last half year, been increased by about £200; but, as regards the debenture bonds, we have paid off £350, so that we are really trading on rather less capital this half year than formerly. Our creditors on bills payable have increased by an amount of £1500 or £1600, so that we are indebted to that extent more than before. On the credit side of the account the only item which calls for any remark is an increase of £1200 on the works, and apparatus, and plant. This arises from the entire completion of the boundary wall round the works, the filling in of the swamp, some extra mains laid, and some meters and services supplied to meet the increase in the number of the consumers; and I am glad to say, from Mr. Wells's report, we may now fairly anticipate that, so far as the expenditure on the works is concerned, our capital account is certainly for the present closed, though, of course, as our works are capable of supplying gas for a rental of something like £12,000 a year, it would be rather a matter of congratulation to the shareholders if the directors had to announce that they required an enlargement of those works, as it would clearly indicate a satisfactory increase of rental The only other item of increase is under the head of passage-money of engineer and workmen to Singapore, which had been charged to capital. All the other items, as regards preliminary expenses, advertising, rent of offices, &c., remain the same. As regards the profit and loss account, the first item which calls for attention on the debtor side is coals carbonized. We were rather in hopes that that amount would be a satisfactory amount this half year. We had carbonized a good deal of Labuan coal at 5 dollars a ton; the company then increased the price to us to 7 dollars, and we carbonized about 200 tons at that rate. Finding we were taking it pretty readily at 7 dollars, the Labuan Company increased the price to 9½ dollars, and not only was the price increased, but we had some difficulty in getting the particular quality—No. 4 seam—that we wanted and the quantity that we required. Having carbonized a large number of tons of that coal at a low price, we were in hopes that the account would have turned out satisfactory; but, on working out our stock of English coal, at the end of the half year there was a considerable deficiency, though it was somewhat compensated for by there being found a surplus of cannel coal. The whole result, however, has been to produce a deficiency in the coal account of the half year, and the directors had their choice of recommending to the shareholders either to pay off that deficiency at once, or of spreading it over several half years. The directors considered it most advisable to keep the concern in a sound condition, and that therefore the best course would be to pay off that default in the coal account at once. All persons connected with gas-works know that in the manufacture of gas you merely estimate the quantity of coal carbonized, and that very often, when you go to work out the stocks, you find a difference—either a deficiency or a surplus. Unfortunately, in our case it has been a deficiency, and therefore on the principle that the directors would like to see a sound dividend though a small one always increasing rather than a high dividend

subject to fluctuations downward, thought it desirable to pay off the deficiency at once; otherwise we should have been prepared to recommend the declaration of a half per cent. more on this occasion than they have done. We have to a certain extent been experimenting upon coals, and unfortunately it has not been very successful. We ordered some coal from Australia, and the first cargo of 400 tons did not turn out satisfactory. Mr. Wells and the local committee at Singapore, in the exercise of their discretion, thought it desirable, more Australian coal having arrived, to try a further quantity; and they have since purchased 880 tons at the moderately low price of 38s. The results are exceedingly gratifying, so that we may hope for the future our chief supply of coal will be from that colony, and that we shall obtain it at a reasonable rate. The coal I have just referred to was purchased at Singapore for 38s. per ton, at a time when freights from England were at 40s. and 42s. So that we could not have laid down English coal at our works at that particular time under 50s. per ton. We therefore secured a considerable advantage by taking it from Australia on that occasion. The only other item on the debtor side of the profit and loss account which calls for a remark is that of "Interest on loans and debentures." Here there is an increase, and the reason for it is this: that, in discounting bills to provide ourselves with funds on this side during the half year, we have, in consequence of the state of the money market, to pay more for interest than usual. And then, too, the interest on debentures appears for the first time in our accounts. On the credit side there is an increase of £1050 in the gas-rental, but, though there is this large increase, yet, as you will see by Mr. Wells's report, the rental has not increased in the way which he anticipated. The great financial disaster which passed over this country in the months of May and June last, has operated prejudicially over at Singapore to the extent of inducing persons not to lay on fittings so readily as they otherwise would, and also inducing them to reduce their gas accounts. Of course, with gas at 13s. 6d. per 1000 cubic feet, people are more anxious to economize than when it is supplied as in London at 4s., and the Chinese have found out that they can effect an economy by attention to their taps and burners. Yet, although that was the case during the last half year, I may mention to you that, at the period of our latest advices, an improvement appears to have taken place; for, during the month of August, our consumption for private persons was over half a million cubic feet of gas, the largest amount we ever sold in any single month to private consumers. In a letter which we received from Mr. Wells this morning, he tells us that the demand in September showed an increase over that for August, and that on the 1st of October we may expect a considerably larger increase. The item of "Products, profits on fittings, and sundries," is less by £246 than it was last half year. This arises from two causes—first, we have derived no profit whatever this half year from the fixing of lamp-posts, which has in previous half years yielded us a fair return; and, secondly, during the half year we have used a large quantity of Labuan coal, from which we have obtained no coke at all, so that our coke receipts have been very much reduced. However, the general results of the half year's working are, that we have been enabled to write off the deficiency in the coal account—a circumstance which we do not anticipate will occur again—and to offer you a half per cent. more in dividend than we paid before. Mr. Wells's report refers to the lighting up of the Fort, which took place on the 1st of September; and I may mention to you, as a matter for congratulation, that during the first week or ten days lighting the consumption (with the Flag Staff) was at the rate of £650 per annum. I do not know whether that will continue, but there is no doubt the consumption will be something considerable. At the last meeting some of the shareholders expressed their feeling of great satisfaction at the intelligence and spirit displayed by Mr. Wells at Singapore. The directors cordially sympathized in that feeling, and, acting on the recommendation of the shareholders, they have increased the remuneration of Mr. Wells, and have held out to him the prospect that as the concern progresses they will be able still further to increase the advantages of his position. The directors think with the shareholders that the ability and energy of their engineer is a matter which ought not to be lost sight of. (The chairman closed his observations by quoting an extract from the *China Telegraph* upon the present condition and future prospects of Singapore.)

Mr. Cooke seconded the motion for the adoption of the report.

The Chairman, in reply to an inquiry, said the deficiency in the coal account was about 120 tons.

The motion was put, and carried unanimously.

The Chairman moved—"That a dividend be now declared to the preference shareholders at the rate of 7½ per cent. per annum, less income-tax, and to the ordinary shareholders at the rate of 3½ per cent. per annum, free of income-tax, on the amount paid up on their respective shares; such dividends to become payable on the 26th of November."

Mr. Cooke seconded the motion.

The declaration of the dividends was unanimously adopted.

Mr. Cooke moved—"That the special thanks of the meeting be given to Mr. E. J. Wells, for the efficient manner in which he has discharged the duties of engineer and manager at Singapore." He said the company were under great obligations to Mr. Wells for the energy and skill brought by him to bear upon their concerns; and he did hope that, under that gentleman's successful management, the directors would have more satisfactory reports to lay before the proprietors at their next and subsequent meetings. Their only fear was lest anything should arise to remove Mr. Wells from Singapore. The directors would strive to the utmost of their power to make his position comfortable; and to show that they were desirous of doing so, and in accordance with the wish expressed at the last meeting of the shareholders, made an increase in his salary, and given him an intimation that a further advance should be made as the means of the company would allow.

Mr. Payne seconded the motion, which was very cordially adopted.

Mr. Hunter proposed a vote of thanks to the chairman and directors; also to the local committee at Singapore. He believed the proprietors were all perfectly satisfied with the management of the company's affairs in England; and, as he had been asked to bring this vote before the meeting, it was fair to assume that the directors were quite satisfied with the management of their affairs at Singapore.

The motion was seconded, and carried unanimously.

The Chairman: On behalf of myself and brother directors, I have to thank you for this vote of confidence in us. As regards the board here, I need hardly assure you that we shall do the best we can to conduct the affairs of the company in the most efficient and satisfactory manner. As regards the local committee at Singapore, I say now, as I have said before, that I think the great safeguard of this company is, that it is composed of the chief merchants out there—men who are locally interested in the place, and men, too, who occupy official positions in various departments—and I am quite sure that they will use all their energy and influence to cause our concern to prosper. In addition to the advantage arising from their being the chief men in the place, they have taken a considerable number of shares in the company, and therefore it is their interest as shareholders, as well as residents and consumers, that the company should progress.

The proceedings then terminated.

METROPOLIS GAS SUPPLY.

City Court of Sewers, Guildhall—Tuesday, Oct. 30.

At the sitting of the Court, this day, Dr. Letheby reported that the illuminating power of the gas supplied to the City during the week had been above the requirements of the Act of Parliament, the average power having been from 13·81 standard sperm candles to 14·27. The amount of sulphur in the Chartered and City gas had not been excessive, but the amount of sulphur in the Great Central gas had been excessive.

In the course of the proceedings,

Mr. Cox requested permission to refer to a subject of great importance. He alluded to the quality of the gas supplied to the citizens. Week after week Dr. Letheby reported that an excess of sulphur existed in the gas of the Great Central Company, and no action was taken by the commission. He suggested that now was the time to test the question, and as the corporation had directed the special Gas Committee to proceed in the next session of Parliament to deal with the whole subject, he thought the commission should at once exercise their powers in order to procure gas of at least the purity sanctioned by Parliament. He therefore moved that it be referred to the Streets Committee to inquire, and after conferring with the solicitor report to this commission thereon.

Mr. Pedler seconded the motion, which was put and carried.

Mr. Cox said that a report on the sulphur in the gas by Mr. Hawksley had been long promised, and as he understood there was no objection to produce it, he would move that Mr. Hawksley be requested to furnish it forthwith.

This motion was put, and was also carried.

Tuesday, Nov. 6.

Dr. Letheby reported that the illuminating power of the gas supplied to the City during the week had been above the requirements of the Act of Parliament, the average power of each of the companies gas having been above 14 sperm candles, and excepting the Great Central gas the amount of sulphur had been less than 20 grains per 100 cubic feet.

Deputation to the Board of Trade.

A deputation waited by appointment on Saturday, the 10th inst., on the Right Hon. Sir Stafford Northcote, M.P., President of the Board of Trade, and the Vice-President, to invite the action of the Government, in pursuance of the recommendation of the committee of the House of Commons of the last session, that amendments should be introduced into the Metropolis Gas Act of 1860. The following gentlemen attended:—Mr. M'Cullagh Torrens, M.P., Mr. Donald, Mr. Kneestub, Mr. Staunton, Mr. Merriman, Mr. Comyn Ching, Mr. Bradshaw, Mr. James Beal, Mr. Dyer, Mr. Dresser Rogers, Mr. Samuel Hughes, Mr. Dowden, Mr. R. H. Wyatt, parliamentary agent. The committee to whom it was referred in the last session to consider the City Gas Bill, and also to inquire into the operations and results of the Metropolis Gas Act, 1860, reported that they found the illuminating power greater, and the quality of the gas better in Manchester, Edinburgh, Birmingham, Plymouth, and other towns, than in London; that the purification is imperfect in London; that the effect of the Act was to raise the market value of the shares, and to increase the dividends of the companies, so that all now pay 10 per cent., and many have in addition paid large sums in the form of back dividends, and have laid by reserve-funds. The committee also reported in favour of a higher illuminating power and a reduction in price; that a chemical board should be appointed, at the cost of the gas companies, to regulate the analysis of purity and illuminating power, with adequate powers; that the testing-place should be provided at the cost of the company; that proper testing officers should be appointed for each district, testing continuously, and registering every test; that a chief analyst should be appointed to direct the operations of the testing officers; that the limitation of the power of making up former deficient dividends should be reduced from six years to three years. They reported in favour of the districting system, sanctioned by the Act of 1860, and in favour of the consolidation of companies, or of the disposal of their interests to the bodies representing the ratepayers. They recommended a more summary mode of recovering penalties against gas companies, and that the Act should be amended to carry out the report.

Mr. James Beal said: There is no public body authorized to act in the name of the ratepayers to represent their interests in this question, unless the several vestries agree to nominate some deputed authority to represent them as a whole, as was done in the proceedings out of which resulted the Metropolis Gas Act, 1860. The difficulties, however, which the joint action involved were so great that it will hardly be again resorted to. At that time the companies having parliamentary powers to light the same district gave up the competing policy, and divided the metropolis into districts. It was to regulate the monopoly so established that the vestries joined their forces. The Government had been communicated with, and had, relying on Sir W. Congreve's report in 1823, in which districting was suggested, stated they could not aid us in opposing districting, but thought a regulation Act was necessary, and would agree to a committee to consider the question. Nothing resulted from the committee, and subsequently a bill was introduced, and was sent to a committee upstairs in the usual way. After sitting 21 days the bill as passed was reported to the House, where it met with a most formidable opposition from the overwhelming joint-stock interests in the House of Commons, and was subsequently referred back to the committee, who reported in a few days a bill largely mutilated of provisions in the interest of the public. Such bill ultimately became law. The suggestions for amendment now made by the committee mainly relate to points upon which we were defeated by the adverse action of the House. There is likely, therefore, to be much opposition in the House. I think it only right frankly to put this to you in asking you to take up the question, as within the action of your department, at the point remitted to the Government by the parliamentary committee. We desire, and we think you will see it is essential, to provide some machinery for the investigation of the accounts of the gas companies, to render efficient any control over the prices charged. Let me present an illustration. They are required to present accounts to Parliament. In one account presented this year, that of the London Gas Company, there is a charge of £56,000 for ordinary repairs of works and premises, and £17,000 for repairs to mains; while the Imperial Company, with three times the capital, charges under the same head £49,000 and £11,000. The Equitable, with less than half the capital of the London, charges £4000 and £3450 for the same work. The Western, again, with about the same

capital as the Equitable, charges £3600 and £700 respectively. In the case of the water companies, in 1852 an investigation of accounts took place, and capitals were adjusted with enormous beneficial results to the public. To this we attach great importance, and to the suggestions of the committee we give our adhesion, qualified by special reference to the suggestion that the public authorities in London should be authorized to treat for these works, to acquire them, and to contract for a supply of gas. We believe under that arrangement gas, for which we are now paying 4s. and 4s. 6d., could be supplied for 2s. 9d. to 3s. per 1000. There is abundant evidence to support this view. In the case of Manchester, referred to by the committee, a very large revenue is derived by the corporation from the management of the gas supply, available in reduction of rates, upwards of £1,000,000 having been derived and expended in local improvements. Whether the gas consumer should have the whole benefit, and no part be diverted in reduction of local rates, is an important question, but we are urgent that the Government should give effect to the views of the committee, and arm the local authority with full powers to protect the public interests involved. The public pay more than two and a half millions annually for gas; there is a share capital of some £6,000,000 invested. The interests are vast, and we feel they can only be adequately protected and controlled by Government action, so long as the metropolis is left without municipal powers.

Sir STAFFORD NORTHCOTE inquired whether it was not a question upon which the Metropolitan Board should take action.

Mr. M'CULLAGH TORRENS, M.P., explained that the action of the Metropolitan Board was not municipal; what London wanted was a municipal organization which would enable the ratepayers to protect their interests.

Mr. S. HUGHES drew attention to the great disparity in the capitals of the several companies, to the imperfect returns presented to Parliament, and to the absence of any provision to enforce more perfect returns. The returns moved for some years since by Mr. Brotherton and Mr. Moor should be continued. As to the meter question, he referred to towns where the public lamps were charged for by one meter to every twelve lamps—to Worthing, one to every seventy lamps—and urged that so reasonable a mode of charging should be compulsory on the companies. He explained the fallacies of the present system of testing, and showed by experiments how the quality of gas could be almost instantly changed.

Mr. DRESSER ROGERS explained the action taken by the City last session in the interest of the whole metropolis, and strongly urged Government action to embody in a bill to amend the Gas Act of 1860 the recommendations of the last commission.

Mr. DONALD complained that he paid some hundreds per annum for gas, and the whole building of St. James's Hall paid near £1300 per annum for a bad article at an exorbitant price—that he was paying 5s. 6d. for what was called cannel gas of 20 candles, and at Manchester they paid 3s. 2d. for an infinitely superior light.

Sir STAFFORD NORTHCOTE inquired what was the result of the inquiry into the capital accounts of the water companies in 1852, and what department of Government undertook it.

Mr. BEAL explained that Mr. Edwin James represented, he believed, the Board of Health, and that the result of an inquiry into capital was to reduce the West Middlesex capital from £830,000 to £506,300; the Chelsea Water Company from £428,243 to £300,000; the Great Junction from £523,735 to £354,000; and the Southwark and Vauxhall from £439,662 to £303,600.

Sir STAFFORD NORTHCOTE promised to consider the question, to obtain further information, and to give an early answer, as the urgency of the question had been so strongly pressed.

The deputation thanked the right honourable gentleman for the great attention he had given to the question, and hoped they might anticipate a favourable reply.

DR. WHITMORE'S REPORT ON THE QUALITY OF THE GAS SUPPLIED IN ST. MARYLEBONE, IN OCTOBER, 1866:—

OCTOBER.	Illuminating Power in Sperm Candles.			Mean Pressure in 10ths of an inch.	
	*Mean of 25 Observations.	Highest.	Lowest.	Highest.	Lowest.
Imperial Company's gas	14·65	15·50	14·07	16·62	7·83
Chartered Co.'s common gas . .	13·05	14·57	12·14	24·82	12·56
Chartered Co.'s cannel gas . . .	20·25	21·75	19·20	25·90	11·97

* Each observation consists of 10 readings of the photometer.

The illuminating power of the Imperial gas has been, during the past month, equal to the light of 14½ sperm candles, or about 22 per cent. above the standard required by Act of Parliament; seven times it exceeded 15 candles, and on eighteen other occasions it was over 14 candles; its pressure has not always been satisfactory, but the cause has been explained and already remedied. The intensity of light of the common gas of the Chartered Company has been on the average 1 candle in excess of the standard, on two occasions it was over 14 candles, and on twelve other occasions it exceeded 13 candles; the pressure of this gas has been uniformly good. The cannel gas has been on the average equal to the requirements of the law, but nine times it did not reach the light of 20 sperm candles; the pressure also, although high, has frequently been very unsteady. As regards purity, all the gases have in this respect been equal to that of previous months; there has been no sulphuretted hydrogen, always more or less of ammonia, and never any excess of sulphur. The above results are obtained from the Imperial Company's gas at their Fulham works, and from the Chartered Company's common and cannel gas manufactured at their works in the Horseferry Road, Westminster.

DR. WHITMORE'S REPORT ON THE QUALITY OF THE WATER SUPPLIED IN ST. MARYLEBONE, IN OCTOBER, 1866:—

OCTOBER.	Total Solid Matter in degrees or grains per Imperial gallon.		* Loss by Incineration of Solid Matter in previous column.		Ammonia.
	Sept., 1866.	Oct., 1866.	Sept., 1866.	Oct., 1866.	
Distilled Water . . .	0°	0°	0°	0°	0°
West Middlesex water	17·28	20·16	0·80	0·56	....
Grand Junction water	18·24	20·28	0·84	0·64	....

* The loss by incineration represents the amount of organic and other volatile matters contained in 70,000 grains of water.

The water supplied to the parish by the West Middlesex and Grand Junction Water Companies shows, during the month of October, some little increase in the quantity of its saline constituents as compared with that of the two previous months; but in respect of its organic impurities, which is most important as affecting public health, the quantity is much reduced. I can bear testimony to the great comfort which the poor of this parish have derived, and the advantage which it has been to them in a sanitary point of view, from having an additional supply of water on Sunday mornings; the West Middlesex Company (which supplies nearly the entire parish) has conferred this boon upon 146 streets, courts, and mews, situated in our most crowded districts; and the few small streets supplied by the Grand Junction Company have received a similar benefit.

COMPOSITION AND QUALITY OF THE METROPOLITAN WATERS, IN OCTOBER, 1866.—The following are the returns of the Metropolitan Association of Medical Officers of Health:—

Names of Water Companies.	Tot. solid Matter per gal.	Loss by Ignition*	Oxidizable Organic Matter.†	Hardness.	
				Before Boiling.	After Boiling.
Thames Water Companies.	Grains.	Grains.	Grains.	Degrees.	Degrees.
Grand Junction	21·00	1·00	0·81	15·0	5·0
West Middlesex	20·98	1·01	0·98	16·0	6·5
Southwark and Vauxhall . .	21·66	1·14	1·00	15·0	6·0
Chelsea	20·33	0·66	0·59	14·0	6·0
Lambeth	21·34	0·75	0·80	16·0	5·0
Other Companies.					
Kent	27·19	1·98	0·28	18·5	8·0
New River	18·87	0·75	0·31	15·0	4·5
East London	18·59	0·80	0·68	16·0	5·0

HY. LETHEBY, M.B.

* The loss by ignition represents a variety of volatile matters, as well as organic matter, as ammoniacal salts, moisture, and the volatile constituents of nitrates and nitrites.

† The oxidizable organic matter is determined by a standard solution of permanganate of potash—the available oxygen of which is to the organic matter as 1·8; and the results are controlled by the examination of the colour of the water when seen through a glass tube two feet in length and two inches in diameter.

PRESENTATION TO THE LATE MANAGER OF THE NEWCASTLE GAS-WORKS.—The firemen connected with the Newcastle and Gateshead Gas-Works have presented Mr. Robert Gray, manager of the works, with an elegant gold pencil-case, gold ring, and gold locket. The locket bears this inscription:—"Presented to Mr. Robert Gray, manager of the Newcastle Gas-Works, by the firemen, as a mark of respect for him, 31st Oct., 1866." The presentation was made in the presence of the firemen by Mr. Clark, sub-manager, who in a brief speech expressed the respect and esteem which the men connected with the works felt for Mr. Gray, and their regret at his departure. Mr. Clark concluded by wishing that every prosperity might attend Mr. Gray's subsequent career. Mr. Gray, in reply, thanked Mr. Clark and the workmen generally for the friendliness with which they had spoken of himself. He had always endeavoured, while taking care that the work was done, to treat men kindly in the doing of it. Nothing was lost, but much gained by kindliness. He was not one of those who looked upon a man merely as a machine out of which so much work was to be ground. After a tribute to the good conduct of the men, Mr. Gray took leave of the workmen amidst the warmest demonstrations of affection and regard. Mr. Gray's sojourn in Newcastle has been short, but during that time he has earned the respect of all who knew him.

RAILWAY RATING.—The Great Eastern Railway Company has been engaged for several months past in a poor-rate litigation with several Suffolk parishes. The contest with a first batch of parishes—Haughley, Old Newton, Stowmarket, and Wetherden—has just concluded, and the company appears to have triumphed, the rateable value of the railway in the four parishes being reduced as follows:—Haughley, from £498 to £230; Old Newton, from £2443 to £712; Stowmarket, from £528 to 140; and Wetherden, from £650 to £33. The gross receipts in each parish were calculated thus—Haughley, £2457; Old Newton, £4616; Stowmarket, £800; and Wetherden, £1598. No less than 14 deductions were made from these amounts—firstly, for maintenance of permanent way at £140 per mile; secondly, for locomotive expenses, at 7·12d. per passenger and 9·12d. per goods train mile; thirdly, for waggon and carriage expenses, at one farthing per vehicle per train mile; fourthly and fifthly, coaching, general, and miscellaneous charges (exclusive of legal), apportioned one-fourth at the rate of 2·9d. per train mile, and three-fourths at the rate of 14·33d. per cent. on the gross receipts; sixthly, Government duty at 1½ per cent. on the gross receipts; seventhly, allowance for stations at 4 per cent. on the gross receipts; eighthly, fund for renewal of permanent way, at £124 per mile; ninthly, fund for renewal of engine stock, at 1·04d. per train mile; tenthly, compensation paid for accidents and losses, at 1·04d. per cent; twelfthly, legal expenses, estimated at 0·003 per cent. of the gross receipts; thirteenthly, tithe; and fourteenthly, rates. Total amount of these deductions was—Haughley, £2337; Old Newton, £3904; Stowmarket, £660; and Wetherden, £1554. In the case of Haughley, £110 was afterwards added for the rateable value of a station. A similar litigation is still pending with regard to another batch of parishes in West Suffolk.

SUSPENSION OF THE FIRM OF JAMES RUSSELL AND SONS, WEDNESBURY.—The suspension of this firm on Tuesday last has caused much excitement throughout the district. The alleged cause of suspension is that one of the partners is a considerable shareholder and a director of the New Zealand Bank, which has sustained considerable losses, in consequence of which a heavy call is expected, and the step has been taken with a view to protect the creditors of the firm. The liabilities are stated to amount to £40,000, and the assets to nearly £50,000, without including the plant. It is further understood that the works will be carried on under a deed of inspection, and it is likely that the creditors will receive the full amount of their claims. The suspension was much discussed on 'Change in Wolverhampton on Wednesday, and in Birmingham on Thursday, and was regarded as a very serious matter at such a time as this, when credit is so very tender. The information that transpired during the magisterial proceedings in London, when an agent of the firm was charged with embezzlement, was such as showed that financial operations separate from the business had considerably involved one at least of the firm, but so high was the standing of the concern that it was thought that it would easily pull through. Although the assets, as we observed, are estimated at £50,000, yet it was not thought that the issue to the shareholders would be so favourable as the difference between the two sides of the account as now stated would imply, for it was believed that difficulties not now apparent would present themselves to the inspector under whom the works are to be conducted. The establishment is one, however, where the business appliances are of a first-class character. Much admiration of what it was capable of producing was expressed by competent men who examined it during the visit of the British Association to Birmingham a year ago, and they were especially delighted with the successful manner in which Siemens's furnance had been adopted there.

Share List of Metropolitan Gas Companies.

No. of Shares issued.	Amount per Share.	Name of Company.	Amount paid up per Share.	Div. per Cent. per Annum.	Price per Share.
	£		£ s d	£ s d	£ s d
8000	10	Anglo-Romano . .	10 0 0	9 0 0	11 to 13
5000	20	Bahia (Limited) . .	20 0 0	4 0 0	16 10 0
1000	20	Do., preference .	20 0 0	10 0 0	27 10 0
750	20	Do., do., redeem.	10 0 0	10 0 0	12 10 0
30000	5	Bombay (Limited) .	5 0 0	£5 intr.	4 to 4¼
10000	5	Do., third issue .	4 0 0	£5 intr.	3 to 3¼
10000	20	British, Limited . (Norwich, Hull-Sculcoates, Hanley, Tunstall & Shelton (Potteries), Trowbridge, & Holywell.)	20 0 0	10 0 0	28 to 28½
12000	50	*Chartered*	50 0 0	10 0 0	64 to 64½
6000	50	Do.	35 0 0	10 0 0	43 to 45
10000	20	*City of London*, A shares	20 0 0	10 0 0	26 to 28
10000	10	Do., B shares	10 0 0	4 0 0	6¾ to 7¼
8000	10	Do., new shares.	10 0 0	10 0 0	13 to 14
25000	25	City of Moscow (L)	22 10 0	£7 intr.	15 to 16½
17490	25	*Commercial* . . .	25 0 0	10 0 0	34 to 35
2500	20	Continental Union.	20 0 0	8 0 0	14 to 16
17500	20	Do.	10 0 0	8 0 0	6 to 8
10000	20	Do., preference .	20 0 0	7 0 0	
5827	5	County & Gen. (L)	5 0 0		
2000	5	Do., preference . (Pater, Pembroke, Ely, Lea Bridge, Northfleet, Walton, & Ware.)	5 0 0		
5000	10	*Crystal Pal. Dist.*	10 0 0	10 0 0	13 to 13½
5000	10	Do., preference .	10 0 0	6 0 0	12½ to 13
10000	10	Do.	2 10 0	7 0 0	2¼ to 3
4000	50	*Equitable*	50 0 0	10 0 0	71 to 73
4000	25	Do., new shares.	25 0 0	10 0 0	36 to 36½
23406	10	European (Lim.) .	10 0 0	10 0 0	11½ to 12
12000	10	Do., new shares. Boulogne, Amiens, Rouen, Caen, Havre, & Nantes.)	5 0 0	10 0 0	6 to 6½
20000	10	*Gt. Cent. Gas Cons.*	10 0 0	10 0 0	12¾ to 13½
5000	10	Hong Kong (Lim.)	10 0 0		8 to 10
26000	50	*Imperial*, old sh.	50 0 0	10 0 0	74 to 74½
1300	100	Do., bonds . . .	£100	10 0 0	185 to 190
7000	25	Imperial Austrian.	10 0 0		
28000	50	*Impl. Continental* (Amsterdam, Berlin, Ghent, Hanover, Lille, Rotterdam, Aix-la-Chapelle, Antwp., Bordeaux, Brussels, Cologne, Frankfort-on-M., Haarlem, Stolberg, Toulouse, & Vienna	43 15 0	16 0 0	91 to 93
400	100	Impl. Mexican (L.)	75 0 0		
3000	40	*Independent* . . .	40 0 0	10 0 0	63 to 64
3000	10	Do.	10 0 0	5 0 0	7 to 9
3000	20	Do.	12 10 0	7 10 0	13 to 14
7133	50	*London*	50 0 0	10 0 0	63 to 65
5610	25	Do., 1st pref. .	25 0 0	6 0 0	28 to 29
503	50	Do., 2nd pref. .	50 0 0	6 0 0	
214	50	Do., 3rd pref. .	50 0 0	6 0 0	
18782		Do., 1st pref. sk		6 0 0	
11828		Do., 2nd pref. sk		5 0 0	
12000	5	Malta & Medit. (L.)	5 0 0	3 0 0	
30000	5	Oriental, Calcutta	5 0 0	8 0 0	4¾ to 5½
30000	5	Do., new shares.	1 0 0	8 0 0	¾ to 1
10000	5	Ottoman (Limited)	5 0 0		2 to 4
10000	10	Pará (Limited) . .	10 0 0	£6 intr.	9¼ to 9½
27000	20	*Phœnix*	20 0 0	10 0 0	27¼ to 27½
3600	100	Do., new	20 0 0	7 10 0	22 to 22½
144000	Sk.	Do. (capit. profits)		5 0 0	80 0 0
5000	20	*Ratcliff*	20 0 0	10 0 0	26 to 28
20	20	Rio de Janeiro (L.)	20 0 0	10 0 0	20½ to 21½
6959	5	Singapore (Lim.) .	5 0 0	3 10 0	
2000	5	Do., preference . Shanghai	5 0 0	7 10 0	
4800	50	*Sth. Metropolitan*	50 0 0	10 0 0	75 to 77
15000	10	*Surrey Consumers*	10 0 0	10 0 0	13¾ to 14
10000	10	Do., new	5 0 0	10 0 0	6¾ to 7
9000	50	United General . . (Limerick)	50 0 0	4 12 0	28 to 28½
10000	10	*Victoria Docks* . .			
3000	10	*Wandsworth & Putney*	10 0 0	7 10 0	13¼ to 14
20000	10	Western (Limited) A shares.	10 0 0	10 0 0	13 to 14
16000	10	Do., B shares.	5 0 0	10 0 0	6¾ to 7
10000	10	Do., C shares.	3 0 0	10 0 0	5½ to 6
20000	10	Do., D shares.	1 0 0	10 0 0	1¼ to 2
8000	5	*West Ham*	5 0 0	7 10 0	6 10 0
6000	5	Do., new shares.	3 0 0	7 10 0	3 18 0
551	10	West London Junction (Lim.) . .	10 0 0	6 0 0	
520	10	Do., preference .	10 0 0	6 0 0	

Price Current.

CASTINGS.—*Per Ton.*

Average Weight of Cast-iron Gas-pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lb

Retail Prices are 5 to 10 per cent. higher.	London.	Glasgow.	Newcastle	Wales.	Yorkshire, Derbyshire, and Staffordshire.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Pig Iron, No. 1, G.M.B.	3 15 0	2 14 6	2 12 6	3 10 0	3 15 0
1¼ and 2-inch Socket-pipes	7 10 0	6 0 0	6 15 0	6 15 0	7 10 0
2½ and 3-inch ditto	7 0 0	6 0 0	6 5 0	6 10 0	7 0 0
4 and 5-inch ditto	6 10 0	5 10 0	5 15 0	6 0 0	6 10 0
6 inches and upwards ditto	6 5 0	5 0 0	5 10 0	5 15 0	6 5 0
Retorts, 1st fusion, hot blast	6 0 0	—	5 5 0	5 10 0	6 0 0
Ditto, 2nd ditto, cold ditto	7 0 0	5 15 0	5 15 0	6 0 0	7 0 0
Tank-plates, ¼ thick and above	6 10 0	5 10 0	5 10 0	5 15 0	6 5 0

WROUGHT-IRON TUBING,

Subject to 50 per cent. Discount.

	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 12 feet—per foot		1 0	0 10	0 7	0 5	0 4½
Ditto ditto, from 6 inches to 18 inches—each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting-pieces, or Long Screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, Springs, and Elbows (wrought iron)	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, ditto	4 6	3 0	2 6	2 0	1 6	1 2
Iron Cocks	17 6	9 6	7 6	4 6	3 3	2 6
Ditto, with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing Sockets, Caps, Plugs, and Nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain Sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2-quart	15 0	14 0	13 6	13 0	12 0	—

GAS COALS.—*Per Ton.*

Newcastle.—Unscreened:—

East Castle, Haswells, Nettlesworth Primrose, and South Pelaw ..... 7s. 0d.

Felling, North Pelton, Redheugh Main, Walker's Primrose, West Wear, and Whitwell Primrose ... 7 3

Burnhope, Craghead, Charlaw, Derwent, Edmondsley, Eighton Moor, Hartlepool Pelaw, Holmside, Lambton's Gas, Lanchester Pelaw, Medomsley, Mickley, New Pelaw, Pelaw Main, Ravensworth, South Moor Pelton, South Leverson, Townley Main, Tyne Main, West Pelaw, Wearmouth Hutton, and Witton 7 6

Peareth, Ravensworth Pelaw, Waldridge, West Garesfield, and West Pelton 7 9

Brancepeth, Dean's Primrose, New Pelton, Pelton, South Peareth, Stella, Urpeth, Washington Hutton, and West Leverson 8 0

Ramsay's Newcastle Cannel 20 0

Wigan Cannel (at Liverpool) 17 0

Scotch Cannel:—

Boghead (at Leith) 80 0
Kirkness, best (at Burntisland) 28 6
Capeldrae, 1st quality (at ditto) 28 6
Ditto, 2nd ditto (at ditto) 18 6
Lesmahagoe (at Glasgow) 29 0
Ditto (at Granton) 30 0
Arniston 27 6
Wemyss 20 0
Haywood, Wilsontown (at Granton) 18 0
Pirnie 14 0
Lothian's Cannel (at Leith) 27 6
Myles' Cannel 23 6

FREIGHTS.

Coastwise—Newcastle.—Per Ton:—

Chatham and Rochester 6s. 6d
Cork ..... 9s. 6d. to 10 0
Dover, Folkestne, & Ramsgte. 6s. 6d. to 7 0
Dublin ..... 10s. to 10 6
Exeter Quay ..... 9s. 6d. to 10 0
Ipswich 6 3
London (from Leith) 8 6
London (Pool) 6 9
Lowestoft and Yarmouth 8 0
Portsmouth & Southampton ..... 8s. to 8 6
Plymouth 9 6
Shoreham ..... 7s. to 7 3
Whitstable 6 9
Weymouth 9 0

Foreign.—Per Keel:—

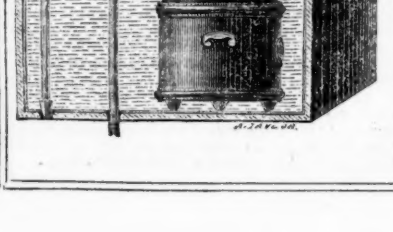
Barcelona 22 0
Bordeaux ..... £13 to 14 0
Boulogne and Calais 8 10
Cadiz 14 0
Cronstadt ..... —
Copenhagen 8 0
Genoa ..... £19. 10s to 20 0
Hamburg ..... —
Havre de Grace 10 0
Leghorn ..... £19 10s. to 20 0
Lisbon ..... £13 10s. to 14 0
Rotterdam 9 10
Stettin ..... —
Trieste 18 10
Venice 23 5

SUNDRIES.

Best Nutle. Fire-bks., p. 1000, £2 10s. to £2 15 0
Cliff's Fire-bks. (at Wortley), p. 1000. 2 15 0
Ingham's ditto (at Wortley), p. 1000.. 2 15 0
Fire-clay Retorts, p. ft. run, 5s. 6d. to 6 7 0
Tough Cake Copper, p. ton 86 0 0
English Pig Lead, p. ton 20 0 0
Welsh Bar Iron (in London), p. ton.. 7 2 6
Foreign Spelter, p. ton 21 0 0
English Block Tin, p. ton 85 0 0
Banca, p. ton 79 10 0
Tarred Rope Yarn, p. cwt. 1 0 0

Advertisements.

HOUSE CISTERN FITTED WITH A CISTERN FILTER.



THE

LONDON AND GENERAL

WATER PURIFYING COMPANY, LIMITED.

PATENT CISTERN FILTER, CHARGED SOLELY WITH ANIMAL CHARCOAL.

THE LATEST PATENTED FILTER IN GENERAL USE,
And requiring, when once fixed, no attention whatever.

Patronized and used by Her Majesty the Queen at Osborne, by H.R.H. the Duke of Cambridge, the *élite* of the Medical Profession, and at the Fusilier Guards, Middlesex, St. George's, German, and London Hospitals, and at the Regent's Park and Tower Barracks, and numerous Institutions, Breweries, &c.

PRICES:

Filter No. 1, yielding ½ gall. p. minute. £1 10 0 | Filter No. 3, yielding 2 gall. p. minute. £3 0 0
Filter No. 2, yielding 1 gall. p. minute. 2 0 0 | Filter No. 4, yielding 4 gall. p. minute. 4 10 0

The Filters may be seen in operation, and full particulars obtained, on application to the SECRETARY, at the Offices,

157, STRAND, LONDON, W.C. (Four Doors from Somerset House).

WANTED, a Cashier and Head RENTAL-CLERK, by a Metropolitan Gas Company. Candidates for the appointment should send in their applications forthwith, stating age and all other necessary particulars.
Address, A. B., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

GAS MANAGER WANTED.

THE Directors of the Tamworth Gas Company require the services of a competent Person from Christmas next. He must reside on the premises, and will have house, gas, and coal free.
Applications, with testimonials to character and ability, and stating salary expected, may be sent to the Chairman before the 3rd of December next.
JOHN HILL, Chairman.
Lady Bank, Tamworth,
Staffordshire.

WANTED, a steady, sober Man, to work a small private Gas and Water Work. Must be able to read indices of meters and keep the works in repair. Wages one guinea per week, with cottage and coal.
All applications to be made to the MANAGER, Gas-Works, Stoke Park, BUCKS.

FOREMAN OF STOKERS.

WANTED, at the Reading Gas- Works, a steady man, as FOREMAN OF STOKERS. The applicant must have had good experience in the retort-house, and be able to take charge of the engine and exhauster.
Applications, with reference, stating wages required and age, to be addressed to Mr. BAKER, Manager, Gas-Works, READING.
Nov. 10, 1866.

WANTED, by the Advertiser, aged 22 years, a Situation as MANAGER of a small gas-work, or as ASSISTANT in a large work. Has a thorough practical knowledge of gas-works, having been five years assistant in a provincial work. Testimonials and security can be given.
For further particulars, address H. CRANMER, Gas-Works, STRATFORD-ON-AVON.

SITUATION WANTED.

AS FOREMAN, Main and Service- Layer, and Fitter, a Man of considerable experience, who has just returned from a foreign Gas-Work. Excellent testimonials.
Address, J. M., Post-Office, KENNINGTON CROSS.

A GENTLEMAN, who has had con- siderable experience in the designing, erecting, and managing of Gas-Works, at home and abroad, desires to obtain another engagement as MANAGER or ACCOUNTANT, to a Gas Company or Corporation. Has first-class testimonials, and can give security, if required.
Address, D. W., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

ASSISTANT-MANAGER, or Out- DOOR SUPERINTENDENT of Gas-Works, in London or the country. The advertiser, having had many years experience, is open to an engagement as above.
Address, A., Mr. Bartlett, 5, Great Queen Street, WESTMINSTER.

WANTED, by a young Man, a Situation as CLERK. Has been in Gas Companies Offices for the last six years.
Address, X. Y. Z., care of Mr. King, 11, Bolt Court, FLEET STREET, E.C.

WANTED, by a steady Man, now in charge of a small Gas-Work, a similar SITUATION. He is useful at the forge, vice, main-laying, and plain house-fitting.
Address, J. A., Gas-Works, Ross.

D. GRANT & CO.,
GAS-METER MANUFACTURERS
(Stamped according to the Sale of Gas Act).
STATION-METERS ANY SIZE.
PHOTOMETERS, EXPERIMENTAL METERS,
PRESSURE-GAUGES, &c.
Price List on application.
GAS-METER WORKS, CROSSCAUSWAY, EDINBURGH.

MARYPORT GASLIGHT COMPANY, LIMITED.

THE Directors hereby beg to inform the numerous CANDIDATES for the office of MANAGER of the Company, that the applicant who has been chosen by the Board to fill the vacant appointment has had notice of his selection, and that all testimonials received by the Directors will, in due course, be returned to the several candidates to whom they respectively belong.
Maryport, Nov. 3, 1866.

LOANS.—The Directors of the Surrey Consumers Gas Company are prepared to issue DEBENTURE BONDS under the authority of the Act 26th Vict., c. 37. The bonds are issued in sums of £100 and upwards for periods of 3 or 5 years, at 5 per cent. per annum, with coupons attached, payable half-yearly.
Applications to be made to the undersigned,
W. P. BODDY, Secretary.
Rotherhithe, S.E., Oct., 1866.

COAL TAR TO BE DISPOSED OF.

THE Directors of the Wakefield Gas- light Company will OFFER to LET by Public Biddings, at the Gas Office, Wakefield, on MONDAY, the 26th of November inst., at Three o'clock in the afternoon, the TAR to be produced at their Works for the term of Three years, commencing on the 1st day of January next. The quantity of coal carbonized during the past year has been 10,000 tons and upwards.
By order,
JOHN WHITAKER,
Gas Office, Secretary to the Company.
Wakefield, Nov. 7, 1866.

THE Directors of the Wandsworth and Putney Gaslight and Coke Company are prepared to receive TENDERS for their surplus TAR and AMMONIACAL LIQUOR, either together or separately, produced on their Works from the present time to the 30th day of June, 1867.
Estimated quantity of Tar . . 60,000 gallons.
Do. do Liquor . 85,000 do.
Further particulars and conditions may be ascertained on application to the Company's Engineer, Mr. H. E. JONES, at the Gas-Works, WANDSWORTH.
Tenders to be sent in, sealed, on or before the 16th day of November, 1866.
By order,
ALFD. LASS, Secretary.
14, High Street, Wandsworth,
Nov. 10, 1866.

TO TAR DISTILLERS.

THE Lessees of the Uxbridge Gas- Works invite TENDERS for all the surplus TAR made at their Works, at per ton, for One year. Make about 50 tons per annum.
Tenders addressed to JOHN RUSSELL, Gas-Works UXBRIDGE.

THE
GAS PRODUCTS UTILIZING
COMPANY, LIMITED.
Subscribed Capital, £100,000; *paid up*, £75,000.
DIRECTORS.
A. A. Croll, *Chairman*.
Lord Alfred Spencer Churchill.
F. W. Collard.
Donald Fraser.
F. A. M. Nicol.
C. Nicholson.
A. Odling.
H. P. Stephenson.

The Directors of this Company are prepared to receive applications for DEBENTURES, in sums of £100 and upwards, for three, five, or seven years, bearing interest at the rate of 6 per cent. per annum, payable half yearly, with coupons attached.
These debentures are to replace others falling due, and are issued under the seal of the Company and signed by two Directors, and the Directors undertake that the total amount of debentures issued shall at no time exceed the amount of capital due upon call on the shares subscribed for.
In addition to the ordinary audit, the accounts of the Company have from the first been verified by Messrs. Quilter, Ball, and Co. The dividends paid to the shareholders from the commencement have been at the rate of 10 per cent. per annum, and the undivided profits at the 30th of June last amounted to over £5000.
Debenture holders, in addition to the uncalled capital, have the security of the Company's freeholds in London and Glasgow, and the valuable plant and works thereon.
The reports of the Company, and any information as to its position, may be obtained of the undersigned.
THOMAS GUYATT, Secretary.
10, Coleman Street, City, London, E.C.
November, 1866.

TO GAS COMPANIES AND CONTRACTORS.

FOR SALE, 4 Purifiers, 9 ft. square by 2 ft. deep, with hydraulic centre-valve, by-pass valves, and 6-in. connexions, vertical condensers, with by-pass, scrubber, and washer; also a STATION-METER and GOVERNOR. The whole of the above are being removed to make room for larger apparatus, rendered necessary by the rapidly increasing business of the Company.
For further particulars, apply to Mr. A. C. FRASER, Manager, Gas-Works, COLCHESTER.
Gas Company's Office, Colchester,
Aug. 14, 1866.

FOR SALE, a set of 4 Cast-Iron Dry-Lime PURIFIERS, 10 ft. square and 3 ft. 6 in. deep inside, together with hydraulic centre-valve for 10-in. connexions, and 2 sets of cast-iron girders, 46 ft. 3 in. long, with lifting crabs.
Also a 30,000 feet per hour BEALE'S EXHAUSTER, with 8-in. Walker's valves.
A 12-in. PARKINSON'S STATION-GOVERNOR.
All in excellent order, and sold in consequence of larger being substituted.
Application to be made to the MANAGER of the Leicester Gas-Works.

TO BE SOLD, a Wrought-Iron An- NULAR CONDENSER, a WROUGHT-IRON SCRUBBER, with three shelves, both 10 feet high; TWO PURIFIERS, 8 ft. by 4, by 3 ft. deep; STATION-METER, to pass 2000 per hour, complete, with 5-inch valves, by-passes, and connexions.
Also a SIX-INCH GOVERNOR, with by-pass, and a CAST IRON CIRCULAR TAR TANK, 7 ft. by 4 ft. 6 in.
The whole erected last year, and have been in use about nine months. Also several hundred yards of 6, 5, and 4-inch MAIN PIPES.
Apply at the Aldershot Gas and Water Company's Office, Bank Street, ALDERSHOT.

FOR SALE, an 8-in. Hydraulic Valve for working 4 purifiers, £22 10.; a PURIFIER, 8 ft. by 4 ft. by 3ft. 6 in., new wrought-iron covers and sieves, £35; also 2 PURIFIERS, 4 ft. by 1 ft. 6. in. by 2 ft. deep, with 2 valves, covers, connexions, and lifting apparatus, complete, £35. At GEO. CUTLER'S, 8, Wharf, Wenlock Road, CITY ROAD.

TO GAS COMPANIES AND ENGINEERS.

TO be Disposed of, by the Falmouth Gas, Coal, and Coke Company, Limited, a Cast-Iron GASOMETER-TANK, 45 ft. diameter by 14 ft. deep, in excellent condition—estimated weight about 78 tons; together with the bolts and nuts, belt-hoops, &c., belonging thereto. Now lying at Penryn, very convenient for shipment or delivery by railway.
Also with the above, or separately, the Framing and Angle Iron Curbs for a telescope gasholder to suit the above tank. Also the pulleys, chains, guide-wheels, bars, &c.
Application to be made to Mr. W. WARN, Secretary to the Company, Falmouth, Cornwall.
Dated Falmouth, June 23, 1866.

BALANCE-SHEETS AND REVENUE ACCOUNTS

A FIRM of Accountants, much engaged in the preparation of Gas Companies Accounts, are open to contract for the keeping, balancing, or auditing the books of other Companies, which, from their experience, they are enabled to do on moderate terms.
Address, SANDELL & MADDERS, Accountants, 4, Skinner's Place, Size Lane, LONDON, E.C.

KIRKWOOD CANNEL COAL. This Coal is largely used in the Gas-Works at Glasgow, Paisley, Port Glasgow, Edinburgh, Leith, and many other towns throughout Scotland. It yields 10,618 cubic feet per ton; illuminating power, 37·55 standard candles; coke per ton, 9 cwt. 83 lbs. Railway communication from the pits (at Coatbridge) to all parts of the country; ports of shipment in Firths of Forth or Clyde.
For quotations, &c., apply to Mr. JOHN MACDONALD, 68, St. Vincent Street, GLASGOW.

JAMES OAKES and CO.,
ALFRETON IRON WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 30, WHARF ROAD, CITY ROAD, LONDON,
Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water-Works, including Iron Retorts, Socket and Flange Pipes, Bends, Branches, and Syphons of all sizes, Lamp Columns, &c., &c.
N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.
CHARLES HORSLEY, Agent.

ECONOMY IN GAS PURIFICATION.

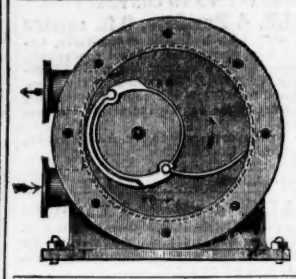
Mc DOUGALL'S

HYDRATED PEROXIDE OF IRON.

This Oxide is now well known, and has commended itself for efficiency and durability. It is free from any mixture of sawdust or similar material, and every particle is available for use. It readily takes up sulphur, revivifies rapidly, and lasts longer than any other Oxide in the market. Prices on application to—

ALEX. Mc DOUGALL, Manufacturing Chemist,

LONDON—11, Arthur Street West, London Bridge, E.C.; MANCHESTER—Riga Street, Shudehill.

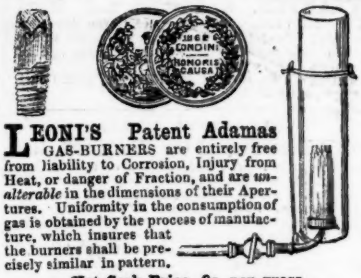


HORSLEY'S
PATENT
GAS EXHAUSTER.
(From 250 Feet to 200,000 Feet per Hour.)
The only Exhauster not requiring a relieving-valve in the by-pass. For particulars and prices apply to the PATENTEE,
22, Wharf Road, City Road, London, N.

To Gas Companies, Gas Engineers, Gas Fitters, &c.
THE
NEWEST DESIGNS
FOR
LAMP-POSTS, DWARF GAS PILLARS, BRACKETS,
LAMPS, LANTERNS, &c.,
Will, upon receipt of particulars, be forwarded free, on application to
TURNER & ALLEN,
IRONFOUNDERS, ENGINEERS, &c.,
201, UPPER THAMES STREET.

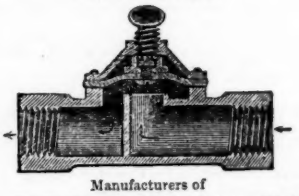
WOLVERHAMPTON RETORT WORKS.
ESTABLISHED **1840.**
JOHN EUNSON AND SON,
GAS ENGINEERS, AND MANUFACTURERS OF CLAY RETORTS,
AND FIRE GOODS IN GENERAL,
WOLVERHAMPTON.
Retort Mouthpieces, Bolts, Nuts, and every description of Wrought-Iron Work.

WALTER FORD,
159, GRAY'S INN ROAD, LONDON.
MANUFACTURER OF WET AND DRY GAS-METERS, STATION-METERS, GOVERNORS, &c. &c.
Sole Manufacturer of **PADDON'S PATENT STREET-LAMP REGULATORS,** for insuring any required consumption. These Regulators are in general and increasing use, and references can be given to Gas Companies who use them for every Lamp.



LEONI'S Patent Adamas GAS-BURNERS are entirely free from liability to Corrosion, Injury from Heat, or danger of Fraction, and are *unalterable* in the dimensions of their Apertures. Uniformity in the consumption of gas is obtained by the process of manufacture, which insures that the burners shall be precisely similar in pattern.
Net Cash Price, 8s. per gross.
Patentee and Sole Manufacturer, S. LEONI, 34, St. Paul Street, New North Road, LONDON, N.

THOMAS LAMBERT & SON,
SHORT STREET, LAMBETH, LONDON.
CARTER'S SAFETY GAS-VALVES,
Made to suit every Description of Fittings.
Section of Valve open.



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A PRIZE MEDAL

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These Valves are formed of two cylinders, working one on the other horizontally, having their faces ground perfectly gas-tight.

They are adapted either as central valves, for two, three, or four purifiers—as bye-passes—or as inlet and outlet-valves for gasholders.

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All sizes, from ¼ in. to 4 in. diameter and upwards.
Also,
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WASHERS for GAS and STEAM JOINTS.
VALVES (pure solid Rubber) for STEAM-ENGINES.
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J. SUGG and CO., late ALBERT KELLER, Ghent.—The removal of the import duties on Earthenware permitting the entry of Clay Retorts into England, Messrs. Sugg, of Ghent, beg to draw the attention of the Gas Companies of London, and other Cities, to the very superior quality of the RETORTS manufactured by them. They can be made of any size, in one piece, and of any form. The price will be in proportion to the weight, and very moderate in comparison to their value.
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It produces 9,400 cubic feet of 17-candle power, and yields 13 cwt. of coke per ton.

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CATHELS'S Patent Four-Way Disc GAS-VALVES, applied to Purifiers, Gasholders, or other apparatus, save from ONE-HALF to TWO-THIRDS the number of ordinary Valves and Connexions. They are simple, strong, and durable; and having no ground faces or rubbing surfaces, cannot get set fast however long they may remain unmoved. The direction in which the Gas is passing can also be seen at a glance.
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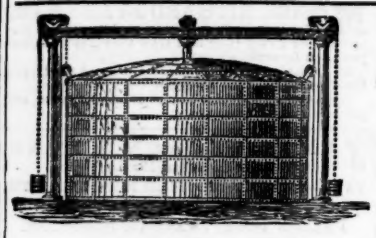

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WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY

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The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

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A large stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all sizes kept in London at CHRISTIE & CO.—Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.

N.B.—*Export orders continue to have prompt attention.*

KING BROTHERS,

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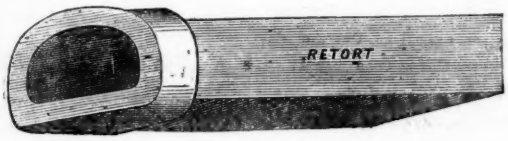

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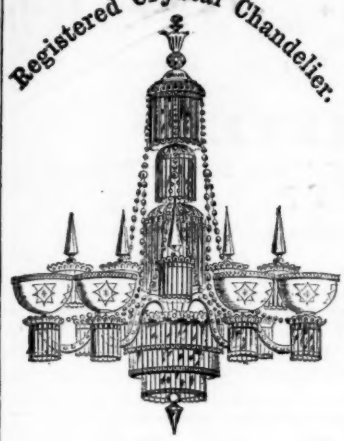
Every Retort and Brick is branded "King Brothers, Stourbridge.'



TO GAS COMPANIES AND THE TRADE.

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The PATENT GAS-REGULATOR and PURIFIER reduced to **6s. 6d. per dozen.** *Pattern-Books of Gas-Fittings, Crystal and Ormolu Chandeliers for* 1865-66 *are now complete.*

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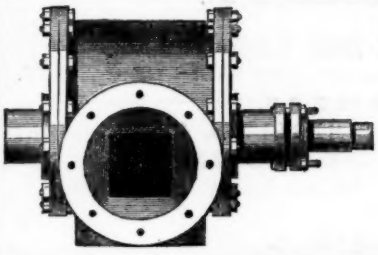

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STEAM-ENGINES and EXHAUSTERS, separately or combined.
FOUR-WAY VALVES, one of which is equal to three ordinary Valves.
STATION GOVERNORS in which the Gasholder cannot tilt and cause accidents.

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